LINE CONTROL UNIT (LCU)

INSTALLATION PROCEDURES

"COMM-STOR*" II COMMUNICATIONS STORAGE UNIT

1. GENERAL

1.01 This section provides installation information for the line control unit (LCU) of the COMM-STOR II communications storage unit manufactured by Sykes Datatronics, Incorporated. The model is an 8220AC dual-drive unit, hereafter referred to as the LCU.

1.02 Whenever this section is reissued, the reason(s) for reissue will be listed in this paragraph.

1.03 Information covering LCU installation procedures is contained in the attached reprint of Section SYKS 578-400-203 prepared by Sykes Datatronics, Incorporated.

1.04 Any form of the word "display" as used throughout this section refers to data output through the terminal port of the LCU (ie, sending data to the terminal).

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Comm-Stor II
LINE CONTROL UNIT (LCU)
INSTALLATION PROCEDURES

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1. INTRODUCTION

GENERAL

1.01 This section provides installation information for the Comm-Stor® II Line Control Unit (LCU), hereafter referred to as the Comm-Stor II LCU, Model 8220AC (dual drive unit).

1.02 Any form of this word *display* as used throughout this section refers to data output through the terminal port of the Comm-Stor II LCU (i.e., sending data to the terminal).

DANGER AND WARNINGS

1.03

Danger: Turn off all the power and signal sources before removing or replacing any module or component.

Warning 1: To avoid possible internal damage to circuitry, wear a static discharge strap connected to ground to allow static discharge before handling circuit boards or components for removal or replacement. Avoid touching circuit lands or components as much as possible.

Warning 2: Put the replaced board in a static bag immediately after removal from unit. Never handle the board outside the bag without being properly grounded.

Warning 3: Handle all diskettes with care.

(Refer to paragraph 6.11.)

2. INSTALLATION OUTLINE

(1) Review service order

(2) Unpack and inspect equipment (Part 3)

(3) Check environmental and placement requirements (Part 4)

(4) Turn on (Part 5)

  (a) Front Panel indicators

  (b) Turning the Comm-Stor II LCU ON

(5) Select the diskette (Part 6)

  (a) System
  (b) Refresh
  (c) Message
  (d) Diagnostic

(6) Perform diagnostic check (Stand Alone Tests) (Part 7)

(7) Install EIA cable(s) (Part 8)

(8) Check configuration parameters (Part 9)

  (a) Data Set
  (b) Terminal
  (c) Comm-Stor II LCU

(9) Activate the Comm-Stor II LCU (Part 9)

(10) Perform operational checkout (On-Line Test) (Part 10)

(11) Complete the installation

  (a) Clean up
  (b) Complete

3. UNPACKING AND INSPECTING THE EQUIPMENT

3.01 To avoid equipment damage, unpack the equipment as close as possible to the installation site.

UNPACKING INSTRUCTIONS (Figure 1)

3.02 To unpack the Comm-Stor II LCU and accessories, proceed as follows:

(1) With box in upright position, open top flaps and fold outward.

(2) Turn box bottom side up, keeping top flaps folded outward.

(3) Lift box off unit and place aside.

(4) Remove inner packing material from around the Comm-Stor II LCU.

(5) Remove plastic bag and all foreign material from the Comm-Stor II LCU.

(6) Look for any accessories that would be packed separately (see part 1.)

(7) Compare accessories and options (on rear plate of unit) with the packing slip to assure completeness of the order.

(8) Properly dispose of the shipping container.

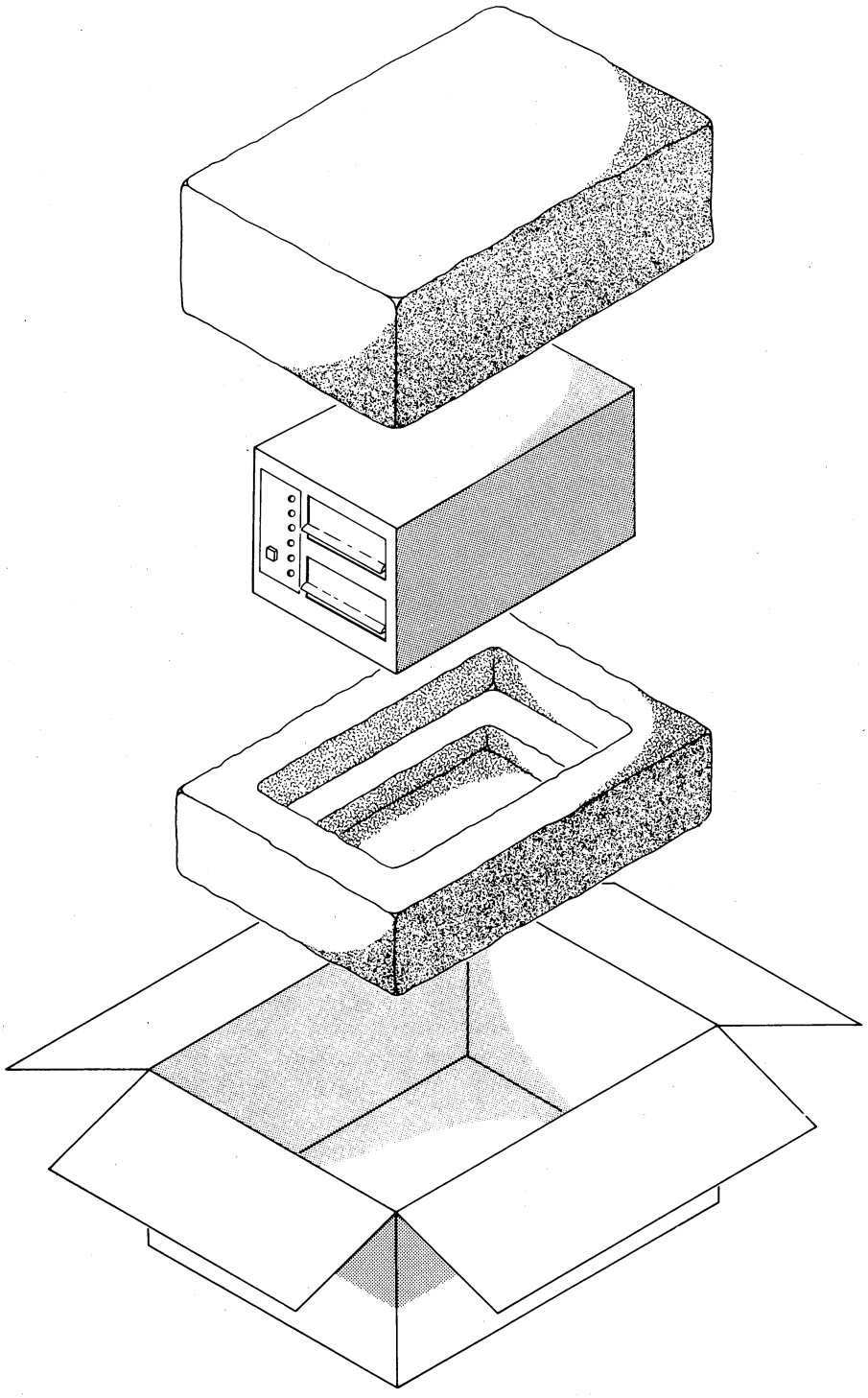


Fig. 1—Packaging Components

VISUAL INSPECTION

3.03 After removing the Comm-Stor II LCU from its shipping container, visually inspect the unit for any shipping damage.

> ***Warning: It is not necessary to remove the cover to perform any of the installation operations. Removing the cover and improperly handling the integrated circuits or other components may cause failures in these parts.***

4. ENVIRONMENTAL AND PLACEMENT REQUIREMENTS

ENVIRONMENTAL

4.01 The Comm-Stor II LCU will function satisfactorily under temperature and humidity conditions suitable for operation of other equipment in an office or laboratory environment: relative humidity ranging from 20% to 90% (non-condensing) and temperature ranging from 45° to 95°F (7° to 35°C).

PLACEMENT

4.02 The Comm-Stor II LCU can be positioned at almost any angle and still function satisfactorily. However, the ideal position is right side up on a table or desk top, or any other hard, flat surface.

4.03 The Comm-Stor II LCU must be situated such that it has at least 4 inches clearance at the rear to allow intake of air by the cooling fan and must be free of any magnetic fields because of the media.

ELECTRICAL POWER REQUIREMENTS

4.04 Voltage and frequency requirements are listed on the configuration plate attached to the rear of the unit. The standard operating requirements are 110v, 60Hz at 2.5 amps. Before connecting the Comm-Stor II LCU to a power source, check to be certain that both voltage and frequency agree with local usage, and that the Comm-Stor II LCU is properly grounded.

4.05 The units are shipped with a three-prong power plug commonly used in the U.S.A. and Canada which meets safety requirements. Do not attempt to defeat the purpose of this plug.

5. POWER ON

FRONT PANEL INDICATORS

5.01 The front panel of the Comm-Stor II LCU has several indicators to assist the operator. Two of the indicators, READY and BUSY, are duplicated to provide information about each drive. When the unit is turned on, all lamps are illuminated for a short time to allow the operator to perform a visual lamp test. The function of each indicator is described below (Fiqure 2).

Restart: A switch/indicator to show when the unit is turned on.

Ready: An indicator which signifies that a diskette has been properly inserted in the drive.

Busy: An indicator which signifies that data is being transferred to or from the diskette. ***A diskette should not be removed when the BUSY indicator is illuminated.***

Carrier: Indicates that a carrier detect signal is present from the modem.

Status: This indicator has three purposes: first, it indicates that data is being transferred to or from any of the ports; second it indicates the presence of a parity error from the terminal. The lamp will normally flicker when data is being transferred to or from any port. If a parity error occurs and data is not being transferred through any of the ports, it will stay on. No correction procedures are required. After a parity error, the lamp can only be extinguished by depressing the RESTART button. Third, if the contents of configuration memory is destroyed, the lamp stays on after power-up.

TURNING THE Comm-Stor II LCU ON

5.02 The Comm-Stor II LCU is to be connected to a power source as described in paragraph 4.04.

5.03 The power switch, located on the rear of the LCU, turns the LCU on and off and acts as a circuit breaker.

5.04 To turn on the LCU, depress the power switch; the RESTART button on the ***front panel*** should illuminate. If it does not light, press the power switch again. It should be noted that there is also a RESTART button on the rear panel of the LCU. Both buttons function identically; however, the one on the rear panel is non-illuminating.

5.05 When provided, the terminal and printer must also be turned on. The order in which power is applied to these devices will not affect the performance of the Comm-Stor II LCU.

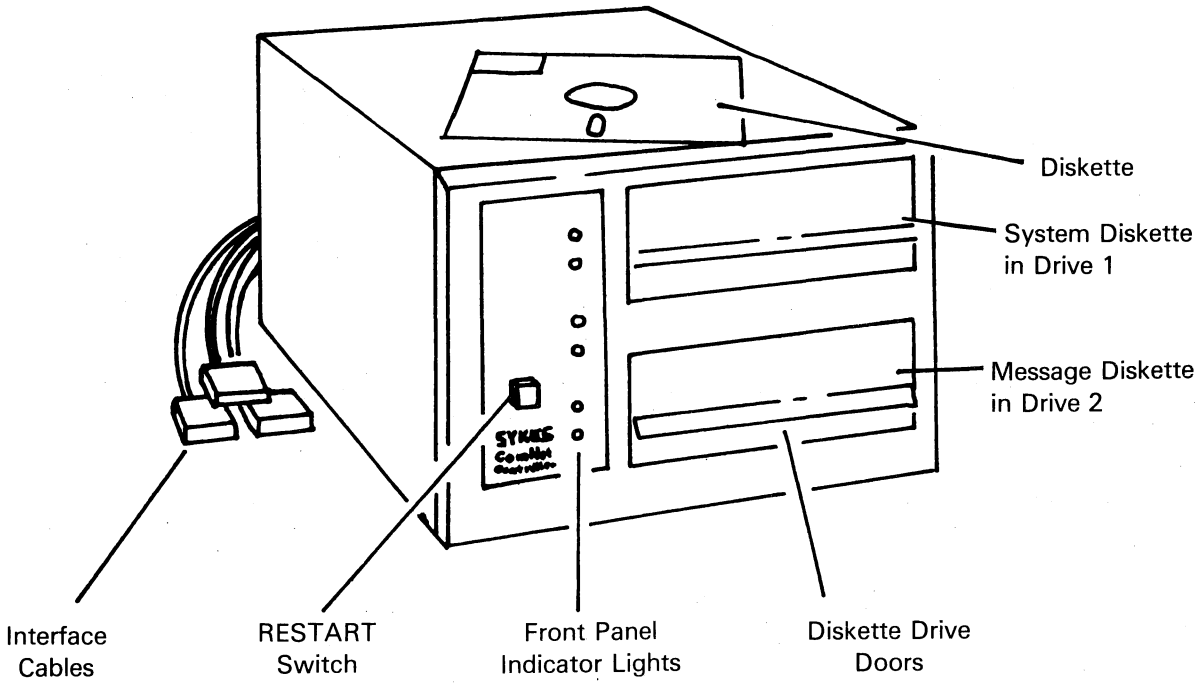


Fig. 2—Front View of the Comm-Stor II LCU

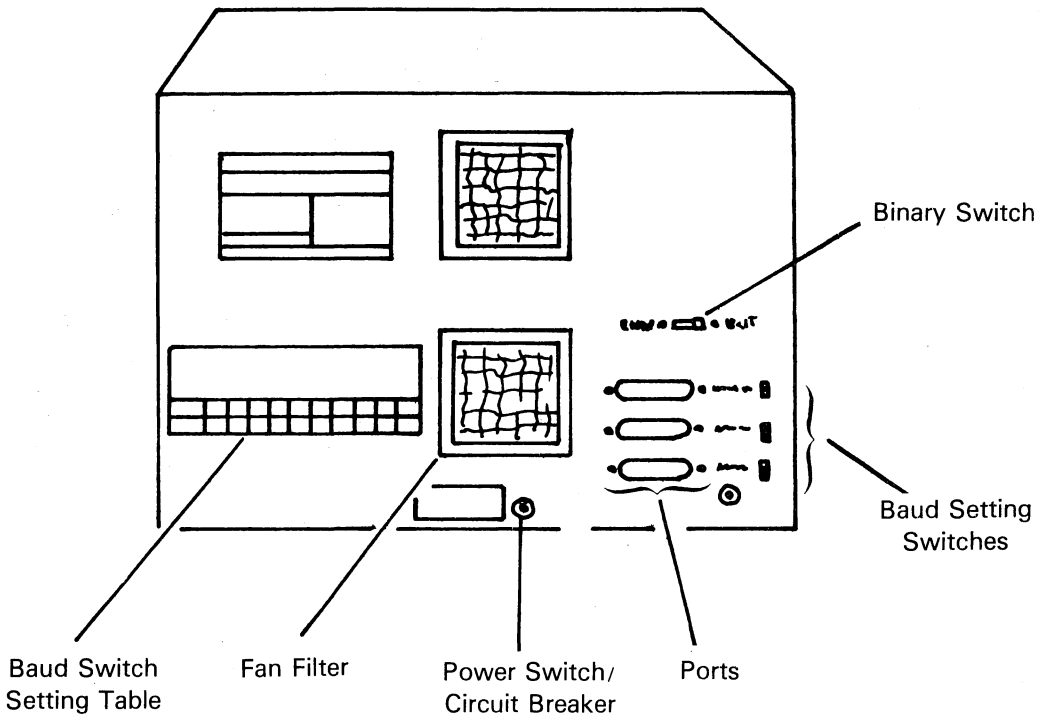


Fig. 3—Rear View of the Comm-Stor II LCU

6. SELECTING THE DISKETTE

Comm-Stor II LCU DISKETTES

6.01 This section contains important reference materials but no procedures necessary for installing the system.

6.02 Each diskette is composed of 77 tracks, and each track contains 26 sectors.

A. System Diskette

6.03 This diskette contains the system information used to run the network. It is always placed in the top drive of the LCU.

6.04 The diskette also contains the configuration procedure for the LCU.

B. Refresh Diskette

6.05 Once the Comm-Stor II LCU is configured, it is possible to store this configuration on a diskette called a Refresh diskette. After a Refresh diskette has been created from a blank diskette, another Comm-Stor II LCU can be identically configured by inserting the Refresh diskette and pressing the RESTART button.

C. Message Diskette

6.06 The Message diskette temporarily stores messages until they are delivered.

6.07 The Message diskette is placed in the bottom drive of the unit.

D. Diagnostic Diskette

6.08 The Diagnostic diskette contains prerecorded information for running the Comm-Stor II LCU User Diagnostic tests described in Section 578-400-503, ***Test and Troubleshooting.***

INSERTING AND REMOVING THE DISKETTE

6.09 The drive doors (Figure 2) of all Comm-Stor II LCU's are equipped with an interlock which prevents them from closing unless a diskette is fully inserted.

6.10 To insert a diskette:

(a) Turn on the Comm-Stor II LCU.

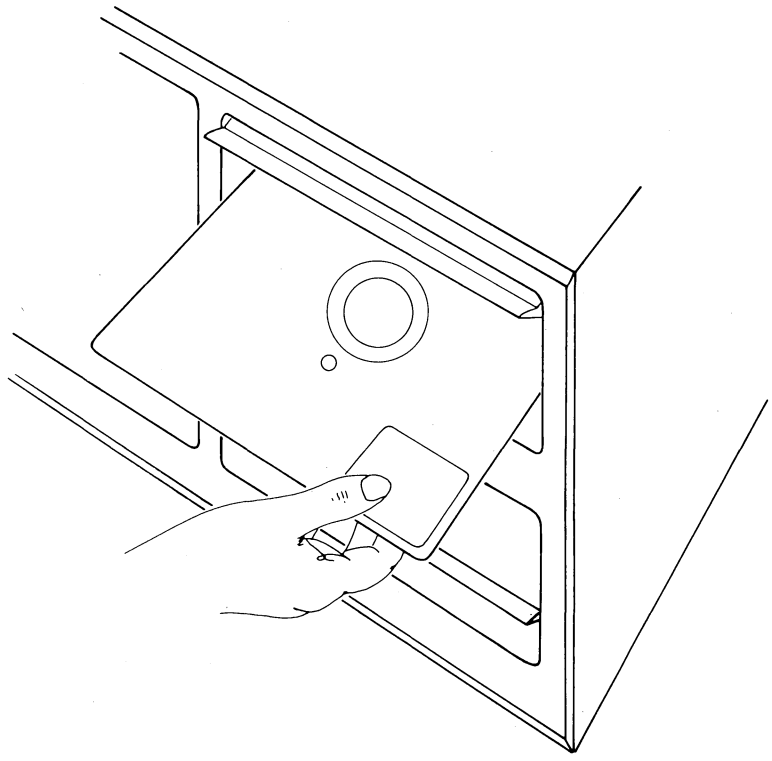


Fig. 4—Inserting the Diskette

(b) Grasp the diskette between the thumb and index finger. The label should be face up and toward the operator (Figure 4).

(c) Slide the diskette into the drive.

(d) Exert a slight inward pressure with the index finger and *gently* pull the drive door down with the thumb. ***Do not force the door closed!*** A gentle horizontal pressure on the diskette is sufficient to release the interlock. When the door closes, the READY light on the front panel will illuminate, indicating that the respective drive is ready for use.

Warning: It is important that diskettes be inserted only with power on as spindle rotation aligns the diskette. A diskette need not be reinserted if power is turned off and on again, provided the door of the drive has not been disturbed.

If the Comm-Stor II LCU is turned off while a diskette is in the drive, opening and reclosing the door may cause mechanical deterioration of the diskette.

6.11 To remove the diskette:

(a) Gently lift the drive door until it is fully open.

(b) Slide the diskette out of the drive.

DISKETTE CARE

6.12 A diskette must be handled with care. Improper treatment or carelessness may result in loss of data, and possibly, many hours of work. Observe the following warnings:

Warning 1: Never touch the exposed diskette surface. Handle the diskette only near the label.

Warning 2: Do not write on the diskette cover; write only on the label. If possible, write on the label before placing it on the diskette.

Warning 3: Do not attempt to clean a dirty or dusty diskette; such a diskette should be discarded.

Warning 4: Keep the diskette away from metals or other potentially magnetic materials or magnetic sources (unshielded power supplies, CRT monitors).

Warning 5: Do not bend the diskette.

Warning 6: Do not expose the diskette to extremes of heat or cold.

Warning 7: Keep diskette in its protective cover when not in use. Dust and liquid can damage the exposed diskette surface.

Warning 8: Store diskettes vertically in boxes when not in use.

7. DIAGNOSTIC TESTS

7.01 This part describes important reference material for running each of the Comm-Stor II LCU User Diagnostic tests. ***If an error occurs at any time during the tests, the defective module should be replaced.***

7.02 Procedures for performing the diagnostic tests are found in section 578-400-503 ***Test and Troubleshooting.*** This information is required by systems technicians in order to pinpoint the fault and repair the Comm-Stor II LCU. This section should be consulted to perform the diagnostic tests described below.

7.03 Procedures are provided to test the dual drive unit and any optional hardware components. Individual tests are selected by setting the modem bit rate switch on the back of the Comm-Stor II LCU. Settings 1-9 correspond to the nine tests (Table A). Test information and errors are reported on the front panel LEDs (light emitting diodes).

TABLE A

MODEM SWITCH SETTINGS

SWITCH SETTING	TEST
1	LED/Switch Test
2	Internal Tests
3	Terminal and Modem Port Tests
4	Reserved
5	Printer Port Test
6	Isochronous Operation Test
7	Hardware Features Check
8	Configuration Memory Test
9	Diskette Test

7.04 In addition to the diagnostic fault tables accompanying each test, two system faults may occur. Each is recognized by the blinking of a front panel light. The READY light will blink if a malfunction prevents the Comm-Stor II LCU from reading the User Diagnostic diskette. The STATUS light will blink if:

(1) the binary switch is set to EXIT and the modem switch is set to 0, or

(2) the user has inserted the incorrect diskette.

DEFINITION OF TERMS

7.05

Diagnostic Test Plug - the diagnostic test plug (Figure 5) is a three part EIA connector which has two switches, numbered "1" and "2", for simulating the peripheral cabling. When mounted on the Comm-Stor II LCU, it covers all three ports. The plug is part of the User Diagnostic Kit Option (Sykes part number 1030A5307).

Drive 1 - refers to the upper drive of an 8220AC system.

Drive 2 - refers to the lower drive of an 8220AC system.

8. CABLE INSTALLATION

GENERAL

8.01 A terminal, a modem, and optionally a second modem can be connected to the Comm-Stor II LCU via industry standard connectors on the rear of the unit (Figure 3). These connectors, commonly called "ports", conform to the Electronic Industries Association (EIA) specification RS-232C.

8.02 Device cables connect to the ports on the rear of the LCU. No special wiring of the cables is necessary.

8.03 Table B shows the EIA interface signal connectors for the terminal, modem, and printer ports. These ports are also described in the paragraphs 8.04 to 8.08.

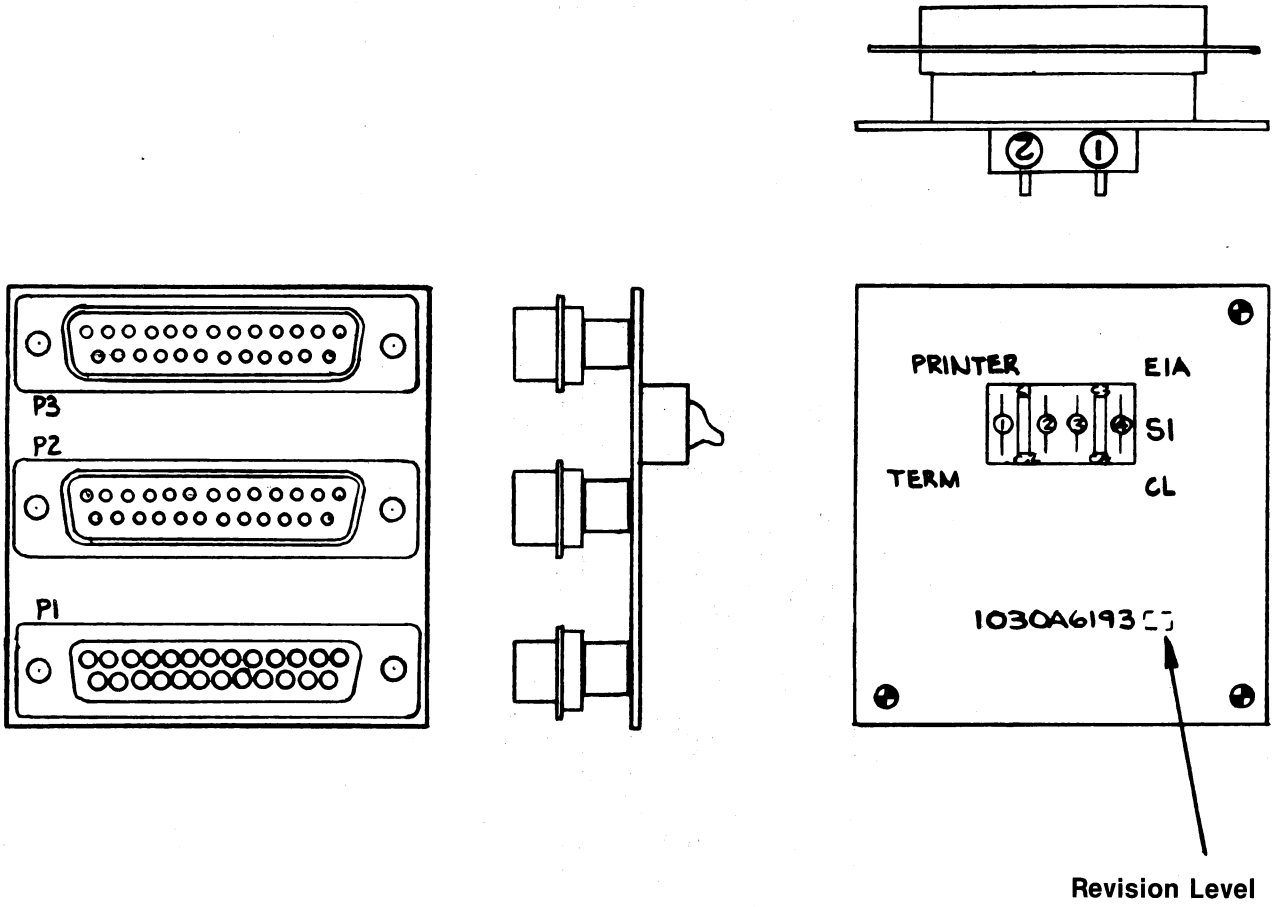


Fig. 5—Diagnostic Test Plug

TABLE B

EIA RS-232C CONNECTIONS

PIN	DESCRIPTION	TERMINAL PORT		MODEM PORT		*PRINTER PORT	
		USED	DIRECTION	USED	DIRECTION	USED	DIRECTION
1	Chassis Ground (FG)	X	—	X	—	X	—
2	Transmitted Data (SD)	X	in	X	out		
3	Received Data (RD)	X	out	X	in	X	out
4	Request to Send (RS)	X	in	X	out		
5	Clear to Send (CS)	X	out	X	in	X	out
6	Data Set Ready (DSR)	X	out	X	in	X	out
7	Signal Ground (SG)	X	—	X	—	X	—
8	Carrier Detect (CD)	X	out	X	in	X	out
**11	Secondary Request to Send (SRS)	X	in	X	out	X	in
12	Secondary Carrier Detect (SCD)	X	out	X	in	X	out
15	Modem Transmit Clock			X	in		
17	Modem Receive Clock			X	in		
20	Data Terminal Ready (DTR)	X	in	X	out	X	in
22	Ring Indicator (RI)	X	out	X	in	X	out

Note: Direction refers to signal direction with respect to the Comm-Stor II unit at each port, e.g., transmitted data is out of the unit on Pin 2 at the modem port.

*Requires special External Port cable. When ordering, specify External Port cable and the required length.

**This pin may be strapped to pin 19.

TERMINAL PORT

8.04 The cable from the Console Terminal connects to the port labeled TERM on the Comm-Stor II LCU. This cable should have a male plug in accordance with industry standard procedures.

8.05 Place the Console Terminal in the full duplex mode for all operations. The Console Terminal must remain in this mode.

PRINTER PORT

8.06 If the External Port is used, the cable is connected to the port labeled PRINTER. This is a special cable and should have a male plug in accordance with industry standard procedures.

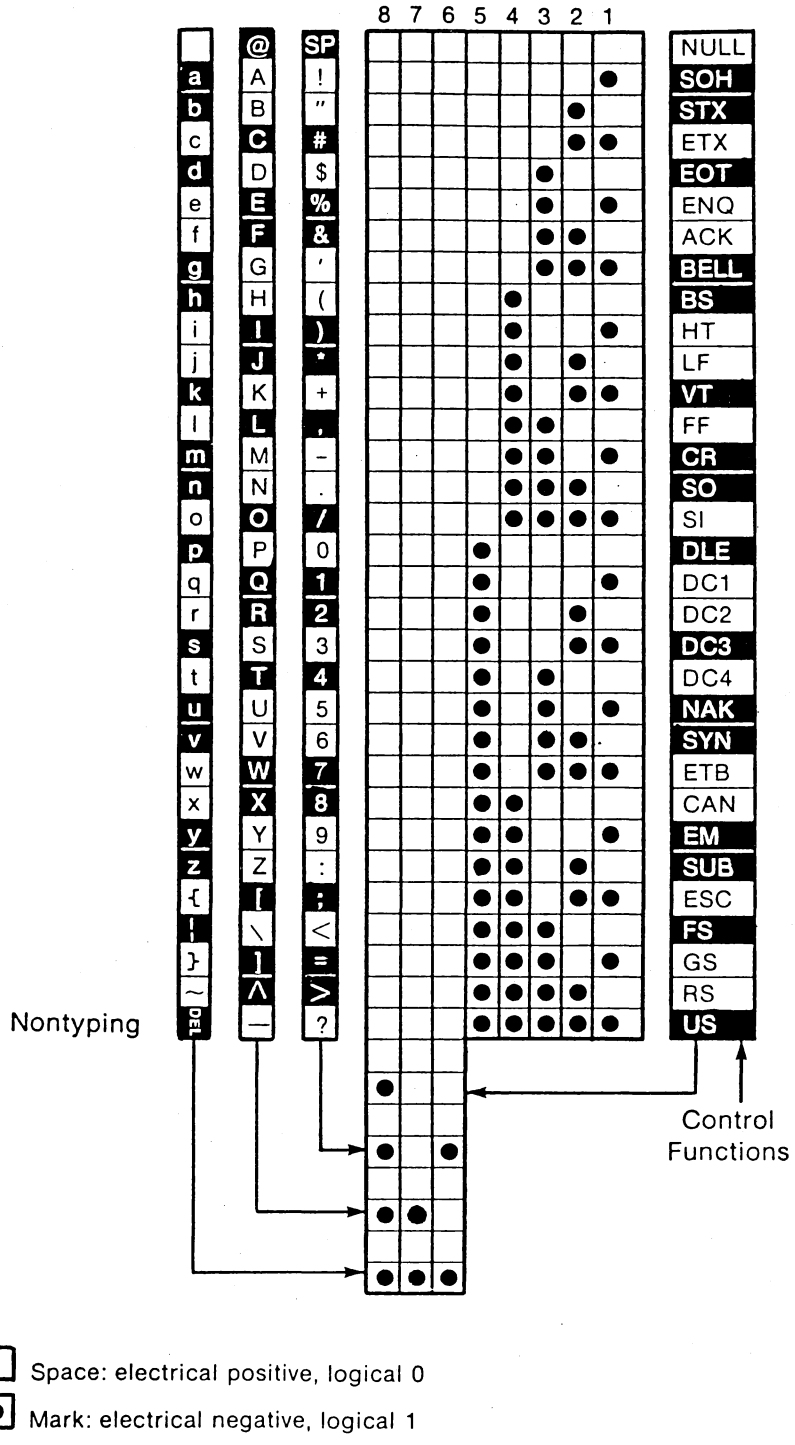
8.07 If the External Port is installed but the user does not wish to use it at this time, the connector may be left unterminated.

MODEM PORT

8.08 Connect the cable from the data set to the port labeled MODEM. This cable should have a female plug in accordance with industry standard procedures.

9. CONFIGURATION

9.01 The Comm-Stor II LCU is Shipped from the factory with a standard configuration. Values are standard ASCII characters (Figure 6). Configuration parameters can be changed to accommodate a wide variety of network requirements.



Note: To obtain even parity, the characters and functions shown with shaded backgrounds have 8th bit marking.

Fig. 6—American Standard Code for Information Interchange (ASCII)

CONFIGURATION PARAMETERS

9.02 Configuration consists of four types of parameters:

(1) operational (message functions),
(2) protocol (system functions),
(3) TTY (XON/XOFF) protocol (external port functions),
(4) 8A1 external port (external port functions).

9.03 The operational parameters and their factory standard values are:

1: RETURN ACKNOWLEDGMENT TO ORIGINATING STATION? /Y/
2: APPEND TRAILER TO MESSAGE AT RECEIVED STATION? /Y/
3: DELIVERY VERIFICATION OPTION /B/
4: DELIMITER TO INDICATE START OF STATION IDENTITY CODES IN HEADER /:/
5: DELIMITER TO SEPARATE STATION IDENTITY CODES IN HEADER / /
6: DELIMITER TO INDICATE END OF HEADER /*NONE*/
7: DELIMITER TO INCLUDE HANDLING INFORMATION IN HEADER ///
8: SEND SERVICE MESSAGE TO (A) NCS, (B) CONSOLE, OR (C) BOTH /C/
9: CONTROLLER TO SEND RECAP TO NCS AT MIDNIGHT? /Y/
10: NUMBER OF DELIVERY ATTEMPTS BEFORE MESSAGE IS INTERCEPTED / 3/
11: NUMBER OF MINUTES HELD BEFORE MESSAGE IS INTERCEPTED / 10/
12: ALLOWABLE NUMBER OF PARITY ERRORS BEFORE REJECTION / 3/
13: PASSWORD TO ACCESS CONTROLLER FROM A STATION /PASSWORD/
14: CHARACTER TO INDICATE PARITY ERROR FROM STATION TO CONTROLLER / ^/
15: RETURN TEXT OF UNACCEPTED MESSAGES TO ORIGINATING STATION? /Y/
16: CONTROLLER IDENTIFICATION TO BE APPENDED TO TRACKING NUMBER /AA/
17: SEND REMOTE MESSAGE NAME /Y/
18: EXTERNAL PORT PROTOCOL / 0/
19: STATION TO RECEIVE COPIES OF ALL STATION MESSAGES /*NONE*/
20: INITIAL CONTROLLER MESSAGE TRACKING NUMBER /00000/

9.04 The protocol parameters follow:

1: SENDER/RECEIVER DESELECT /[^D]/
2: RESTART /[^B]/
3: ALTERNATE RESTART /[^A]/
4: INTERRUPT CODE RECEIVED /[^C]/
5: INTERRUPT CODE SENT /[^C]/
6: SENDER DESELECT, ABORT CHARACTER /[^S]/
7: MESSAGE SEPARATOR FOR BULK TRANSMISSION /[^W]/
8: READY ANSWERBACK /\[^F]/
9: READY ANSWERBACK TYPE /B/
10: NOT READY #1 /\\/
11: NOT READY #1 TYPE /A/
12: NOT READY #2 /[^X^F]/
13: NOT READY #2 TYPE /A/
14: NOT READY #3 /[^X^U]/
15: NOT READY #3 TYPE /A/
16: NOT READY #4 /[^U^D]/
17: NOT READY #4 TYPE /A/
18: CHARACTER SEQUENCE PRECEDING MESSAGE RECEPTION /[^B^B]/
19: OPTIONAL CHARACTER TO FOLLOW ADDRESS SEQUENCE /RUB/
20: OPTIONAL CHARACTER TO FOLLOW POLLING SEQUENCE /[^B]/
21: TIME OUT DURING RECEIPT OF ANSWERBACK / 3/
22: TIME OUT DURING RECEIPT OF MESSAGE / 10/
23: ABORT RECEIVE ON 256 DUPLICATE CHARACTERS /N/
24: CONTINUOUS INCOMING CARRIER /N/
25: DELAY CHARACTER #1 /[^M]/
26: DELAY CHARACTER #1 PORT /*NONE*/
27: DELAY CHARACTER #1 FACTOR / 1/
28: DELAY CHARACTER #2 /[^M]/
29: DELAY CHARACTER #2 PORT /*NONE*/
30: DELAY CHARACTER #2 FACTOR / 1/
31: DELAY CHARACTER #3 /[^M]/
32: DELAY CHARACTER #3 PORT /*NONE*/
33: DELAY CHARACTER #3 FACTOR / 1/
34: DELAY CHARACTER #4 /[^M]/
35: DELAY CHARACTER #4 PORT /*NONE*/
36: DELAY CHARACTER #4 FACTOR / 1/

9.05 TTY (XON/XOFF) protocol parameters are:

1: CHAR RCV'ED TO START/RESUME SEND /^Q/
2: ALT CHAR RCV'ED TO START/RESUME SEND /*NONE*/
3: NO-TRAFFIC ANSWERBACK WHEN SELECTED-TO-SEND /^D/

4: CHAR RCV'ED TO SUSPEND SEND /^S/
5: CHAR SENT TO SUSPEND SEND /*NONE*/
6: CHAR SENT TO EXIT SEND /*NONE*/
7: CHAR SEQ SENT TO PRECEDE TRANSMISSION /*NONE*/
8: CHAR SEQ SENT TO PRECEDE EACH MSG SENT /*NONE*/
9: CHAR SEQ SENT TO FOLLOW EACH MSG SENT /*NONE*/
10: CHAR SEQ SENT TO FOLLOW EACH MSG SENT EXCEPT LAST /*NONE*/
11: CHAR SEQ SENT TO FOLLOW TRANSMISSION /*NONE*/
12: PAUSE AFTER SENDING END-OF-LINE SEQUENCE? /N/
13: LINE-BREAK WILL (A) ABORT (B) SUSPEND SEND /A/
14: DELETE CHARACTER /RUB/
15: RETRANSMIT SEQUENCE /^U/
16: STORE ACKNOWLEDGMENT TO SENT MESSAGES? /N/
17: EXTERNAL PORT DELIVERY ATTEMPTS BEFORE MESSAGE INTERCEPTED / 3/
18: CHAR RCV'ED TO START RCV /^R/
19: CHAR RCV'ED TO END-OF-MSG BUT NOT END-OF-TRANSMISSION /^S/
20: CHAR RCV'ED AT END-OF-MSG AND END-OF-TRANSMISSION /^T/
21: SUBSTITUTE CHARACTER FOR PARITY ERRORS /?/
22: CHAR SEQ SENT/RCV'ED TO ABORT SEND OR RCV & DISCONNECT /^P^E/
23: INITIAL CONNECTION: ENTER (A) IDLE (B) SEND (C) RCV (D) SEND/RCV /A/
24: INITIAL CONNECTION: SEND ANSWER—BACK? /N/
25: DISCONNECT WHILE RCV: (A) IGNORE MSG (B) KEEP MSG /A/
26: AUTO-QUEUE STATION I.D. /*NONE*/
27: STRIP THE COMM-NET MSG HEADER WHEN SENDING THE MSG? /N/
28: CHAR RCV'ED TO INITIATE ANSWERBACK /^E/
29: ANSWERBACK MESSAGE /*NONE*/
30: RTS OFF N CHAR INTERVALS AFTER LAST CHAR (N-0-7) / 0/
31: UNPOLLED ALARM INTERVAL / 0/
32: 1ST-CHAR SENT FOLLOWED BY DELETE-CHAR (CONFIGURE NEXT ALSO) /*NONE*/
33: # DELETE-CHARS TO FOLLOW 1ST CHAR / 0/
34: 2ND-CHAR SEND FOLLOWED BY DELETE-CHAR (CONFIGURE NEXT ALSO) /*NONE*/
35: # DELETE-CHARS TO FOLLOW 2ND CHAR / 0/
36: 3RD-CHAR SENT FOLLOWED BY DELETE-CHAR (CONFIGURE NEXT ALSO) /*NONE*/
37: # DELETE-CHARS TO FOLLOW 3RD CHAR / 0/
38: 4TH-CHAR SENT FOLLOWED BY DELETE-CHAR (CONFIGURE NEXT ALSO) /*NONE*/
39: # DELETE-CHARS TO FOLLOW 4TH CHAR / 0/
40: 5TH-CHAR SENT FOLLOWED BY DELETE-CHAR (CONFIGURE NEXT ALSO) /*NONE*/
41: # DELETE-CHARS TO FOLLOW 5TH CHAR / 0/
42: 6TH-CHAR SENT FOLLOWED BY DELETE-CHAR (CONFIGURE NEXT ALSO) /*NONE*/
43: # DELETE-CHARS TO FOLLOW 6TH CHAR / 0/
44: NUMBER OF HOURS MESSAGES HELD FOR EXTERNAL PORT / 24/
45: CONTROLLER TO LOCALLY DELIVER CROSS-NETWORK MESSAGES /Y/
46: UNRECOGNIZED ADDRESSES SENT OUT EXTERNAL PORT /N/
47: EXTERNAL PORT PARITY /C/
48: APPEND TRAILER TO EXTERNAL PORT MESSAGES? /N/
49: RCV-ERR: (A) NO ACTION (B) DISCONNECT (C) TIMED BREAK /C/

9.06 The 8A1 external port parameters are listed below:

1: SENDER/RECEIVER DESELECT /^D/
2: RESTART /^B/
3: ALTERNATE RESTART /^A/
4: SENDER DESELECT, X-OFF /^S/
5: ALTERNATE SENDER DESELECT /*NONE*/
6: SENT INTERRUPT /^C/
7: ALTERNATE SENT INTERRUPT /^]/
8: RECEIVED INTERRUPT /^C/
9: POLLING SEQUENCE /*NONE*/
10: READY ANSWERBACK /\^F/
11: NOT READY #1 /\\/
12: NOT READY #2 /^X^F/
13: NOT READY #3 /^X^U/
14: NOT READY #4 /^U^D/
15: ALTERNATE NOT READY #4 /^U^D/
16: ADDRESS #1 /*NONE*/
17: ADDRESS #2 /*NONE*/
18: ADDRESS #3 /*NONE*/
19: ADDRESS #4 /*NONE*/
20: ADDRESS AND POLL OPTIONAL CHARACTER /RUB/

21: (A) 2 POLL CHARS (B) 2 POLL CHARS & OPTIONAL CHAR? /A/
22: STOP ON; (A) SENT/RECV INTERRUPT (B) RECV INTERRUPT ONLY? /B/
23: RTS OFF N CHAR INTERVALS AFTER LAST CHAR (N=0-7) / 0/
24: ADDRESS #1; (A) 2 CHARS (B) 2 CHARS & OPTIONAL CHAR ? /A/
25: ANSWERBACK TO ADDRESS #1 ? /Y/
26: ADDRESS #2; (A) 2 CHARS (B) 2 CHARS & OPTIONAL CHAR ? /A/
27: ANSWERBACK TO ADDRESS #2 ? /Y/
28: ADDRESS #3; (A) 2 CHARS (B) 2 CHARS & OPTIONAL CHAR ? /A/
29: ANSWERBACK TO ADDRESS #3 ? /Y/
30: ADDRESS #4; (A) 2 CHARS (B) 2 CHARS & OPTIONAL CHAR ? /A/
31: ANSWERBACK TO ADDRESS #4 ? /Y/
32: ALWAYS ANSWER READY ANSWERBACK ? /N/
33: BREAK; (A) CONTINUOUS (B) TIMED/NO DESELECT (C) TIMED/DESELECT (D) 8B1-NONE /D/
34: ROLLCALL-ANSWERBACK; (A) NONE (B) -RECV-STATUS(C)-RECV&ERROR-STATUS/C/
35: ADDRESS #4; IMMEDIATE RECEIPT OF TRAFFIC-AFTER-READY RESPONSE? /N/
36: ALTERNATE END-OF-TEXT CHARACTER /^]/
37: SEND BULK TRANSMISSION ? /N/
38: MESSAGE SEPARATOR FOR BULK TRANSMISSIONS /^W/
39: ENABLE REMOTE NAMING OF RECEIVED MESSAGES ? /N/
40: RETRANSMIT SEQUENCE /^U/
41: CHARACTER SEQUENCE SENT BEFORE MESSAGE TRANSMISSION /*NONE*/
42: STORE ACKNOWLEDGMENT TO SENT MESSAGES? /N/
43: UNPOLLED ALARM INTERNAL / 0/
44: NUMBER OF HOURS MESSAGES HELD FOR EXTERNAL PORT / 24/
45: EXTERNAL PORT DELIVERY ATTEMPTS BEFORE MESSAGE INTERCEPTED / 3/
46: SUBSTITUTE CHARACTER FOR PARITY ERRORS /?/
47: APPEND TRAILER TO EXTERNAL PORT MESSAGES? /Y/
48: EXTERNAL PORT PARITY /C/
49: CONTROLLER TO LOCALLY DELIVER CROSS-NETWORK MESSAGES /N/
50: UNRECOGNIZED ADDRESSES SENT OUT EXTERNAL PORT /Y/

EQUIPMENT SET UP PROCEDURE

9.07 Data set and terminal options may need to be configured at this time. Refer to the appropriate BSP for the equipment in use for the procedure. Also, see part 11 in this manual.

9.08 The Comm-Stor II LCU requires a Console Terminal capable of operating in the full duplex mode to be connected to the terminal connector (port) on the rear panel of the LCU. The terminal must be capable of operating at one of the transmission bit rates shown in the table on the rear panel of the Comm-Stor II LCU. Set the terminal port bit rate setting switch to the proper position for the transmission rate of the particular terminal in use.

9.09 If the External Port is used, it may be necessary to connect a second data set to the printer port on the rear panel of the LCU.

ACTIVATING THE Comm-Stor II LCU

9.10 Activate the Comm-Stor II LCU by following the procedures below:

(a) **Select the proper transmission rate for the terminal port by adjusting the terminal port thumbwheel switch on the rear panel of the LCU.**

(b) Select the proper transmission rate for the modem port by adjusting the modem port **thumbwheel switch on the rear panel of the LCU.**

Note: Set the thumbwheel switch to zero if isochronous operation and/or a nonlisted transmission rate is used.

(c) Turn power on by pressing the main power switch located on the rear panel of the LCU below the fan filter. This action will cause the READY and BUSY indicators of drive 1 to blink in an alternating pattern.

(d) Turn power on to all devices.

(e) Insert the System diskette into drive 1 (top) and a blank, unformatted Message diskette into drive 2 (bottom).

Note 1: Inserting the wrong diskette in either drive will cause the READY and BUSY indicators for drive 1 to blink in an alternating pattern.

Note 2: Inserting a "bad" or damaged ***System diskette*** will cause all the front panel indicators to blink continuously. Insert a new System diskette and repeat step (f).

(f) Press the RESTART button and the front panel indicators will illuminate briefly. Both READY lights will turn on and remain illuminated. The LCU will then output an asterisk (*) to the Console Terminal and begin to initialize the Message diskette. (Initialization takes approximately one minute.) The BUSY lights will go on and off during initialization.

Note 3: If a Message diskette error is detected during initialization, the READY and BUSY indicators on drive 2 will blink continuously. Insert a new Message diskette and repeat step (f).

(g) When initialization is completed, the LCU displays the "COMMAND?" prompt.

Note: If the thumbwheel switch at the modem port has been set to any value ***except*** zero, proceed to step (i). If a zero was selected, proceed to step (h) or the LCU will issue all communications at the defaulted value of 1200 baud, asynchronously.

(h) Enter a 7[CR] at the Console Terminal. Enter the desired baud rate.

(i) Enter a 2[CR] at the Console Terminal. Then enter the current time/date in military time, without colons, hyphens, or slashes. Use zeros where necessary. The LCU will give the prompt response:

CLOCK SET TO MM:DD HH:MM

(j) Enter a 3[CR] at the Console Terminal. A period prompt displays.

(k) Enter R[CR] and the system responds with "--SURE?". Enter Y[CR]. This entry sets the operational parameters to factory standard values.

(l) Enter P[CR] and a colon prompt displays.

(m) Enter R[CR] and the system responds with "--SURE". Enter Y[CR]. This entry sets protocol parameters to factory standard value.

(n) Enter Q[CR] and the "COMMAND?" prompt is issued.

(o) Enter a 6[CR]. The LCU will display the statement:

RETRIEVING POLLING TABLE

and then will issue a semi-colon (;) prompt. Type L[CR].

(p) Verify that the unit displays:

NCS, NA, NP

Note: The test station must be compatible with the factory standard values for the LCU protocol parameters (refer to 9.03).

(q) Enter (Q[CR]) and the following question appears:

SEND RECAP TO NCS?

Enter Y for yes or N for no. Answering Y will send a network status Recap report to the Network Control Station. Then the "COMMAND?" prompt is displayed.

(r) Enter 1[CR] and wait for the LCU to display:

MM-DD HH:MM NETWORK RESTARTED
MM-DD HH:MM NEW POLLING TABLE INSTALLED

The STATUS and CARRIER indicators will go on and off, signifying that the LCU has started to poll NCS and ***activation is completed.***

10. OPERATIONAL CHECKOUT (ON-LINE TEST)

10.01 To test the operation of the network after installation and activation, contact the specified Test Center, requesting that a message be sent to itself.

10.02 If the external port is used, refer to Section 578-400-503, ***Test and Troubleshooting.***

11. TYPICAL DATA SET/PRINTER/TERMINAL OPTIONS

11.01 This part describes some of the peripheral devices that can be interfaced with the Comm-Stor II LCU. Table C lists these devices and the procedure required for interfacing each. Although configuration information is given, the installer should not attempt to reconfigure the system.

12.01 The following tools and supplies may be required for installing or servicing the Comm-Stor II LCU. Most of these items should normally be present in standard maintenance tool kits. Bell System part numbers are included.

TOOLS

Digital Volt Meter, Voltage accuracy ± 1% AC, ± .5% DC; Ohm accuracy ± 2% AC, ± 1% DC
Nut Driver, 1/4"
Nut Driver, 11/32" - TP 113777 Kit
Wrench, Hex Key 3/32"
Wrench, Hex Key 1/16"
Wrench, Hex Key 5/64" - C Wrench Kit

TABLE C

DATA SET/TERMINAL/PRINTER INTERFACE PROCEDURES

DEVICE	INTERFACE PROCEDURE
Data set 108 Type	(a) Connect EIA cable: female to the modem port of the Comm-Stor II LCU, male to the data set. (b) Set the modem bit rate switch to 4 (300 bits). (c) Be sure the configuration parameters are set to factory standard values.
Data set 202T	(a) Connect EIA cable: female to the modem port of the Comm-Stor II LCU, male to the data set. (b) Set the modem bit rate switch to 5 (1200 bits). (c) Be sure the configuration parameters are set to factory standard.
43 Teleprinter (43 KSR or RO)	(a) Connect EIA cable: female to the Teleprinter, male to the terminal port of the Comm-Stor II LCU. (b) Set the terminal bit rate switch of the Comm-Stor II LCU to: 4 (300 bits) - for 30 CPS operation 1 (110 bits) - for 10 CPS operation 0 - permits bit rate selection from terminal keyboard (c) Set terminal for full duplex operation. (d) Disable parity detection.
Dataspeed 40/2 Terminals	(a) Connect EIA cable: female to terminal, male to the terminal port of the Comm-Stor II LCU. (b) The following terminal options must be selected for compatible operation: Option 10a Line Ending Sequence = [CR] [LF] Option 11b Receive After Send Option 40b Do Not Go Receive on Sending [CR] Option 41b Full Duplex Option 44a Enable EIA Interface Option 45b Disable Current Loop Interface Option 46a 103-Type Data Set Interface Option 47b Disable Printer Interface Option 49b Disable Interrupt Feature for KD Stations Option 50a Go Local and Hold Upon Printer's SSI Loss The baud rate of the 40/2 terminal must be compatible with the Comm-Stor II LCU.

Subminiature Long Nose Pliers - KS 21257
Flat Needle File or Fine Emery Board - TP 125758
Screwdriver, Phillips 1/4'', 4'' blade, 2 point size - Type B, Size 2 - AT 7739
Screwdriver, Phillips 1/8'', 2'' blade, 0 point size - Type B, Size 1 - AT 7739
Screwdriver, Slotted 1/4'', 4'' blade - AT 7825, 4'' Blade
Screwdriver, Slotted 1/8'', 2'' blade - AT 7825, 2'' Blade
Tweezers - TP 151392
Static Ground Strap (Simco Neutrostat, 3M Velostat, or equivalent) - TP 346392
IC Removal and Insertion Tool (Jensen #331B202 and #331B102) - TP 407326

SUPPLIES

Head Cleaner Solution (Miller Stephenson - MS200 or Isopropyl Alcohol)

Soft Wiping Cloth (Lint-free)

Contact Cleaner (Miller Stephenson MS230)

Fan Filter Spray Super Filter Coat #1, Research Products Corp.

Conductive Foam Blocks (for holding ICs)

DISKETTES

12.02 The following diskettes are required for installing or servicing the Comm-Stor II LCU:

User Diagnostic Diskette
(contained in Kit #1030A5307; comprising diskette and test plug)

Standard Factory Refresh Diskette (locally supplied)

Line Controller System Diskette (Sykes part number 1030A5305)

Message Diskettes (Sykes part number 1030A0095)