the 43 teleprinter

INSTALLATION
& ROUTINE SERVICING

---

for TABLETOP
BUFFERED KSR TERMINAL
(HALF DUPLEX BATCH ONLY)
CP43.015.000

CUSTOM SYSTEMS
DIVISION

THE 43 TELEPRINTER
TABLETOP BUFFERED KSR -- CP43.015.000
INSTALLATION AND ROUTINE SERVICING MANUAL

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PART 1 -- INTRODUCTION

This manual provides information on the installation and routine servicing of the 43 Teleprinter for Tabletop Buffered KSR Friction Feed Terminal CP43.015.000. Instructions are provided for service personnel with a minimum of training, tools and spare parts, to enable variable features, connect the proper interface, correct minor troubles and periodically inspect, lubricate and clean the terminal during extended service intervals.

The tabletop buffered Model 43 Keyboard Send-Receive (KSR) teleprinter terminal provides for off-line data preparation (Message Enter, Edit and Store), batch transmission, and line speeds higher than the continuous printing rate. The total amount of data that can be stored in the send and receive buffers is determined by the memory size provided, minus approximately 600 characters dedicated to the terminal. This dedicated area includes an options store programmable by the user. Memory size of 16,000 characters is available.

The terminal can operate at 110, 200, 300, 600, 1200 or 1800 baud using an 8 bit character structure in an asynchronous format with 33/35 ASCII* protocol. Printout is on a 80-column, 10-character-per-inch printer utilizing 8-1/2 inch friction feed paper. A 7 by 9 dot matrix produces up-low character shapes for ASCII printing graphics and special symbols for 32 ASCII Control codes.

Terminal interface is EIA type RS-232-C† and is intended for use with a customer provided data set for use on switched network lines.

Information on how to change user programmable options, check proper operation, change the ribbon cartridge and install paper is included in the How to Operate Manual furnished with each terminal.

NOTE: When ordering replaceable components, unless otherwise specified, prefix each part number with the letters "TP" (ie, TP410055). Product numbers with "CP" prefix are manufactured by Custom Systems Division, Teletype Corporation.

Tools and spare parts that may be required are as follows:

DESCRIPTION	TELETYPE COROPRATION PART NO.
3/16" and 1/4" Open-End Wrench	129534
1/4" 6" Blade, Screwdriver	100982
1/16" Allen Wrench	124682
1.0 A SLOW-BLOW Fuse	143306
1.0 A Fuse	120139
Lubricants	See Page 3-6
Connector, Adapter (see Page 3-3)	403378

In the event that troubles occur that cannot be corrected with the information in this manual, refer to the Service Manual 406, or replace the terminal.

*American National Standard Code for Information Interchange
†See Teletype Corporation Technical Reference for 43 Teleprinter Buffered KSR Terminals.

PART 1 -- INTRODUCTION (Cont)

The tabletop buffered KSR teleprinter can be identified as shown below:

TELEPRINTER CODE	DESCRIPTION	CARD ASSEMBLY	MODEM TYPE
CP43.015.000	16K BUFFER (F)	CP43.015.001	HALF DUPLEX

TERMINAL CODE PLATE LOCATION
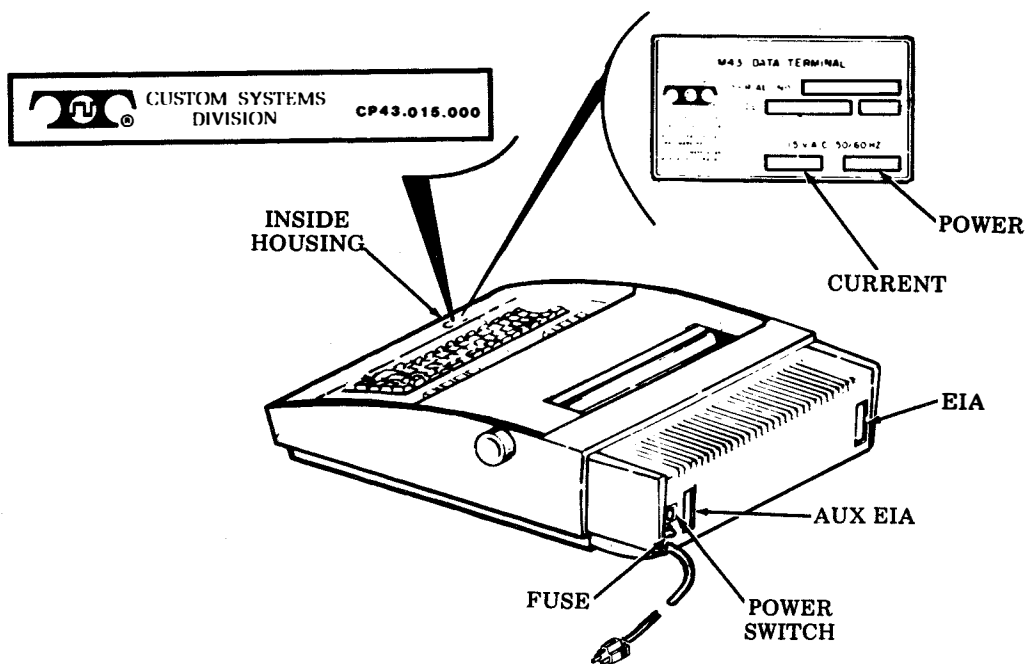
NOTE: The CP43.015.001 card assembly (controller) contains the following Custom Systems Division coded parts:

        CP43.015.002 -- Application Program Circuit Card Assembly
        CP43.015.003 -- EPROM
        CP43.015.004 -- EPROM
        CP43.015.005 -- EPROM
        CP43.015.006 -- EPROM
        CP43.015.007 -- EPROM

PART 2 -- INSTALLATION
A.   SWITCH ENABLED OPTIONS

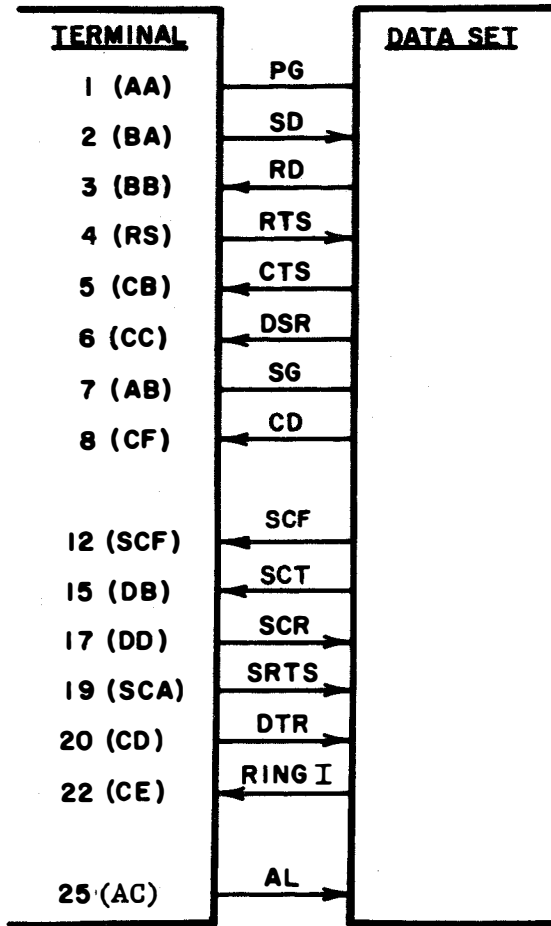The chart below describes options not programmable by the user and provides infor-
mation on how to verify or change the setting of these switch options on the logic
card after the terminal is unpacked.

SWITCH PACK LOCATION
ON CIRCUIT CARD
(See Component Access, Page 3-10.)

OPTION NO.   OPTION SUFFIX   OPTION DEFINITION   SWITCH NUMBERS
AND CONDITIONS

XXX		SPB6				
		1	2	3	4	5
a.						
b.						

431.	Type Font Arrangement	SPB6				
		1	2	3	4	5
a.	Narrow Numeric 0 and Wide Alpha O. Standard ⌢ and Underline _ .	●	●	—	—	—	
b.	Slash Numeric Ø and Wide Alpha O. ∧ Prints as ↑ and _ Prints as ←.	O	●	—	—	—	‡
c.	Slash Alpha Ø and Wide Numeric O. ∧ Prints as ↑ and _ Prints as ←.	O	O	—	—	—	
d.	Slash Alpha Ø and Wide Numeric O. Standard ⌢ and Underline ____ .	●	O	—	—	—	

	SPB6				
	1	2	3	4	5
Switches Must be Set as Shown	—	—	O	O	O	‡

● Indicates toggle or slide position to ON.
O Indicates toggle or slide position to OFF.
— Position of switch does not affect feature.
‡ Factory furnished state of feature.

B. EIA DATA SET INTERFACE SIGNALS

The EIA leads that appear at the interface (EIA designations in parentheses) are defined below in terms of common designations. Arrows indicate direction of data flow or control.

Electrical Characteristics

EIA (RS232) Interface	Electrical Characteristics	
	From 43	To 43
State 0 (space) On	+3 to +25 V dc	+3 to +25 V dc
State 1 (mark) Off	-3 to -25 V dc	-3 to -25 V dc

PG — Protective Ground.

SD — Send Data. Mark in all modes varies when on-line and sending data.

RD — Receive Data. In state supplied by Data Set.

RTS — Request To Send. ON if DTR, DSR and [SND RDY SEND] are ON upon call connection.

Also, ON if ABsnd = y upon call connection.

CTS — Clear To Send. ON allows teleprinter to send. See SCF. OFF teleprinter can receive but not send. See SRTS.

DSR — Data Set Ready. DSR and CD on puts teleprinter in Term On Line mode if DTR is on. If DSR is off teleprinter switches from Term On Line to Term Ready.

SG — Signal Ground.

CD — Carrier Detect. CD and DSR on puts teleprinter in Term On Line mode if DTR is on. If CD turns off, teleprinter remains in Term On Line mode for approximately 20 seconds then switches to Term Ready. Data will appear to be sent but will not. If CD is restored in less than 20 seconds sending will resume with possible loss of one or two characters.

SRTS — Secondary Request To Send. On allows terminal to receive. On if on-line and RTS is OFF.

SCF — Secondary Receive Line Signal Detector (reverse channel). If on-line and optioned for RChnl = y, on allows teleprinter to send if RTS and CTS are ON.

SCT — Serial Clock Transmit. Wired but not active in terminal.

SCR — Serial Clock Receive. Wired but not active in terminal.

DTR — Data Terminal Ready. Off if teleprinter in Term Local, on if teleprinter in Term Ready or Term On Line mode. Receipt of Dscnt (Option) character or depression of Term Ready if in Term On Line mode turns off DTR for minimum 50 ms. Alarm condition turns off DTR if in Term Ready mode. Alarm does not turn off DTR if in Term On Line mode. Off when controller Self-Test is entered.

RING I — Ring Indicator. On condition Primes terminal answer-back. Not connected is an off.

AL — Analog Loopback. Wired internally always off. Analog loop is under control of data set.
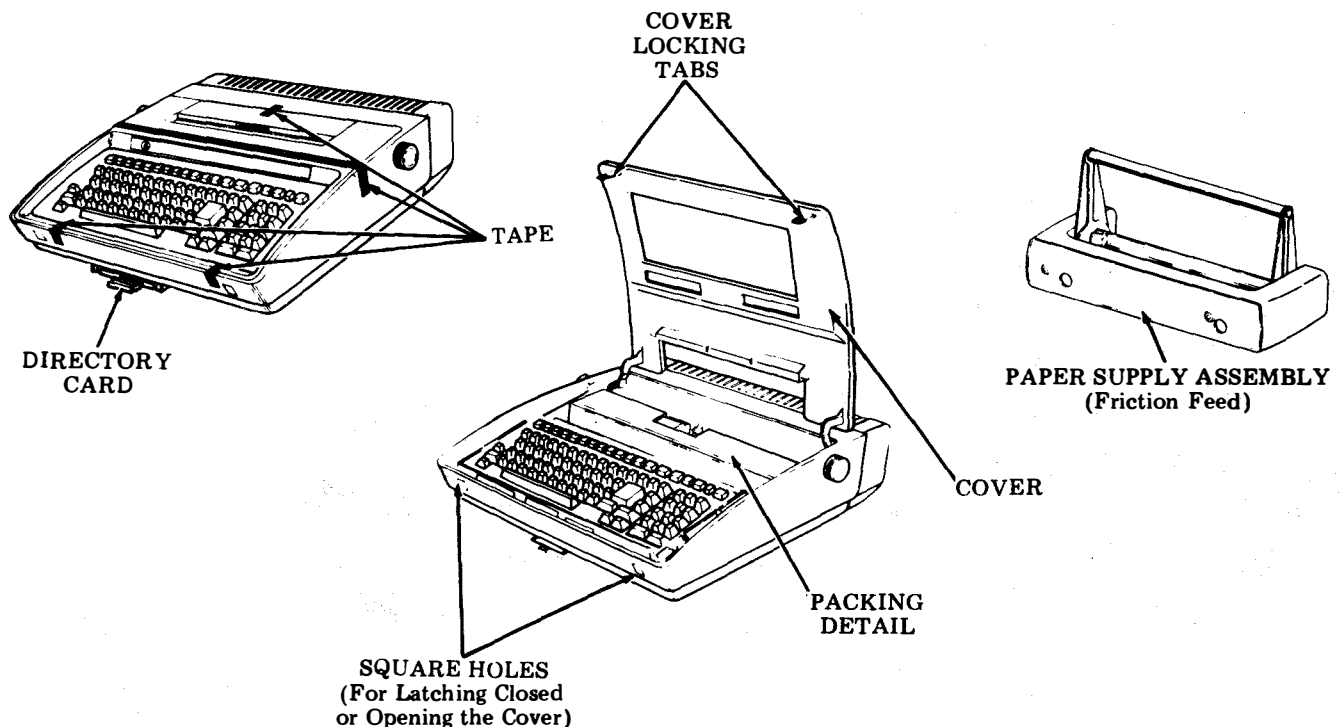
C.   ASSEMBLY

The 43 Tabletop Buffered KSR Terminal is furnished in a single carton. The terminal is fully assembled but data set cord and the paper required must be ordered or obtained separately. (See note below.)

CAUTION: TO AVOID CONDENSATION ON THE ELECTRICAL COMPONENTS, THE TERMINAL SHOULD BE ALLOWED TO ASSUME ROOM TEMPERATURE BEFORE UNPACKING, FOR EXAMPLE, WHEN BROUGHT INTO A WARM HUMID ROOM FROM OUTSIDE SUBZERO TEMPERATURES.

1.   UNPACKING

    a.   Unpack the carton referring to instructions on the container.
    b.   Remove tape securing the cover to the housing (see below).
    c.   Depress the cover locking tabs on the lower front of the cabinet and lift the cover. Remove the packing detail securing the print head (see below).
    d.   Verify that the following items are included in the box:

        1 - 43 Terminal (CP43.015.000)
        1 - Ribbon
        1 - Manual, Installation and Routine Servicing, 489
        1 - Manual, How to Operate, 490
        1 - Paper Supply Assembly (Friction Feed)

COVER LOCKING TABS

TAPE

DIRECTORY CARD

PAPER SUPPLY ASSEMBLY (Friction Feed)

COVER

PACKING DETAIL

SQUARE HOLES (For Latching Closed or Opening the Cover)

NOTE: Paper for the teleprinter (8-1/2 inch wide by 5 inch diameter rolls) must be obtained locally or ordered separately. Refer to How to Operate Manual. Packing detail and carton can be retained and reused in the event it is necessary to further ship or return the terminal.

C. ASSEMBLY (Cont)

2. STATION ASSEMBLY

a. Position the terminal in the location specified by the customer. A minimum
of 6 inches of space behind the terminal is required when the paper holder
is used to feed the paper. The ac power cord extends 6 feet to the rear.
Power cord should be plugged in with the power switch turned off. (Bottom
of rocker switch in.)

b. Install the friction feed paper supply assembly. Refer to Page **3-11.**

c. With ac power to the customer supplied data set turned off, connect the EIA
data set cable to the EIA terminal of the teleprinter and the data set.
Secure using two captive screws on each plug.

NOTE 1: This terminal provides Secondary Request To Send (SRTS) at connector
pin 19, only. The EIA cable used must provide this associated connection to
the data set. The following shielded EIA cables which provide this feature
are available from Custom Systems Division, Teletype Corporation:

Cable	Part No.
3 foot length	CP43.015.009
7 foot length	CP43.015.010
12 foot length	CP43.015.011
25 foot length	CP43.015.012
50 foot length	CP43.015.013

NOTE 2: Data set must be located within 50 cable feet from the terminal.

Buffered KSR (Friction Feed)
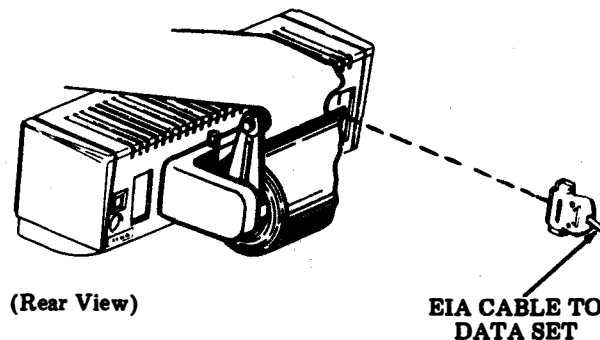
(Rear View)   EIA CABLE TO
DATA SET

d. Install the ribbon and paper. Refer to the How to Operate Manual 490.

e. Record memory size (16K) in the space provided on the directory card shown.
    (See Page 2-3 for location of directory card.)

f. Set any user programmable options, if requested by the customer (refer to
    How to Operate Manual 490)and record any nonstandard options in the space
    provided on the bottom side of the directory card.

Bottom Side of Directory Card   Top Side of Directory Card

g. Fill in the installation information on the top side of the directory card.
    Write in the installation date and "tabletop" in the area as shown above.

h. Install the directory card in the holder provided, "Frequently Called
    Numbers" side up.

3. <u>ACCESSORIES</u>

The following tabletop 43 buffered terminal accessories are available to the
customer

Accessory	Part No.	Specification No.
Pedestal	430311	51006S
Copyholder	430310 Modification Kit	50994S
Modification Kit to add AC Distribution to the KSR Pedestal	430911	50990S

The above parts may be installed following the instruction furnished with each
accessory.

4. STATION TESTING

A minimum checkout (refer to How to Operate Manual 490) to assure that cables have been properly connected and that the terminal is basically operable should be performed. Connect the data set and terminal power cords to a properly polarized and grounded source of 115 V ac power (50 or 60 Hz). Normally the power cords should be connected to unswitched outlets to avoid loss of stored data or call disconnects. Fuse protection should be time delayed and provide for a running current of 0.8 A for the terminal. (1A slow blow fuse)

D. INSTRUCTIONS TO USER

1. Provide the customer with the How to Operate Manual.

2. Discuss source of replacement ribbons and paper. (See How to Operate Manual.)

3. Inform customer of any user programmable options and other variations that may have been set. Direct attention to the directory card, and that set is a tabletop version of the buffered 43 teleprinter.

4. If continuous unattended operation is intended, a means to accumulate paper should be used (such as 430400 Paper Winder).

PART 3 -- ROUTINE SERVICING
A.   TROUBLE ISOLATION AND CORRECTION

This paragraph provides troubleshooting information including Controller Self-Tests intended to isolate a trouble to either the terminal or to the external communications device.   It provides troubleshooting within the terminal to the extent that correction can be accomplished with minimal training required and using the parts and tools indicated in this manual.   See Manual 406 for more detailed troubleshooting.

Trouble analysis is presented in the form of a "20 Questions" routine in the following TROUBLESHOOTING GUIDE.   The guide, with questions and yes or no columns, should be used, always starting with the first question and proceeding according to the "yes" or "no" directive.

1.   TROUBLESHOOTING GUIDE

QUESTIONS	YES	NO
1. Are any indicators on opcon lit? (Power available, AC cord plugged in, terminal power switch on, and cover closed.)	Go to 2.	Go to 1a.
1a. Is there any indication of power in the set? (Opcon lamps flash when KP power is turned on and off, print head indexes to the left, RED lamp on power supply lit, etc.)	Go to 1c.	With power off, check AC fuse F1 (See Page 3-11.) If fuse is OK, trouble is in terminal. Replace fuse if blown. Go to 1b.
1b. Do any indicators now light when power is turned on?	Original trouble is corrected.	Trouble is in terminal. Do not replace fuse second time.
1c. Is RED lamp on power supply lit? See Page 3-10 for location.	Check seating of power supply output cable. Check opcon cable plug.	With power off, check F2 fuse on power supply (See Page 3-11.) If fuse is OK, trouble is in terminal.

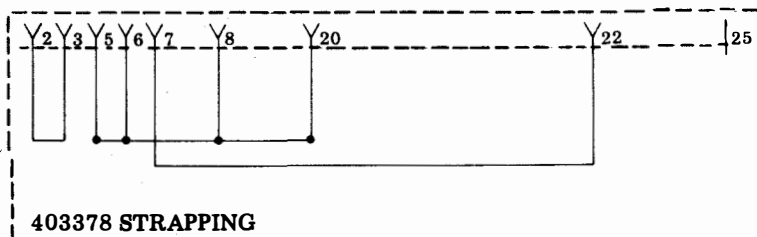## A.   TROUBLE ISOLATION AND CORRECTION (Cont)

1.   TROUBLESHOOTING GUIDE (Cont)

QUESTION	YES	NO
1c. (Cont)	Trouble is in terminal.	If fuse is blown, check for foreign objects between circuit lands or terminals and replace fuse. Go to 1d.
1d. Does RED lamp on power supply now light when power is turned on?	Original trouble is corrected.	Trouble is in terminal. Do not replace fuse second time.
2. Can any characters be locally generated from the opcon to the printer?	Go to 3.	Trouble is in terminal.
3. Are the characters 0 (numeric), $\wedge$, and __ (underscore) printed as ϕ , $\uparrow$, and $\leftarrow$, respectively, in the copy?	Go to 4.	Check Page 2-1, A. SWITCH ENABLED OPTIONS, 431.
4. Are undesired line lengths set when power is applied?	Option switch SPB6 switches 3 and 4 must be off. (See Page 2-1.) Check user programmable options LfBdy and RtBdy for proper values. (Refer to How to Operate Manual.)	Go to 5.
5. Is print density acceptable?	Go to 6.	Replace ribbon.

QUESTIONS	YES	NO
6. Can any data be both sent and received on-line?	Go to 7.	To to 6a.
6a. Does data set provide analog loopback feature?	With Bell System 202S Data Set, the user programmable reverse channel option in the teleprinter must be RChnl = n (see How to Operate Manual 490, if necessary) and the 202S Data Set optioned to turn on Data Set Ready **in analog loop mode (Option YI). With the GDC202-S/T Data Set, these option changes are not required.** **Prepare and store a message in the send buffer (see How to Operate Manual 490, if necessary). Place data set in test mode and go to 6b.**	If 403378 interface loopback connector or equivalent* is available (see illustration below), proceed as follows. Change user programmable reverse channel option in teleprinter to RChnl = n (see How to Operate Manual 490, if necessary). Prepare and store a message in the send buffer (see How to Operate Manual 490, if necessary). Remove data set cable and install loopback connector in teleprinter data set connector, then go to 6c.
6b. With teleprinter in full duplex, S/R, terminal on-line mode, is sent data received? NOTE: If answer-back send option is enabled (ABsnd = y), message will be preceded by the answer-back, and, when send buffer is empty, only the answer-back will be transmitted after each twenty second time-out.	Take data set out of test mode. Enable user programmable reverse channel option as in normal terminal operation (RChnl = y) if changed in YES response to Step 6a. Go to 7.	**If 403378 interface** loopback connector or equivalent* is available (see illustration below) proceed as follows. Check that user programmable reverse channel option in teleprinter is RChnl = n. Prepare and store a message in the send buffer. Remove data set cable and install loopback connector in teleprinter data set connector, then go to 6c.

*Go directly to the NO response directive for Step 7 if a loopback arrangement is not available.

403378 INTERFACE LOOPBACK CONNECTOR

403378 STRAPPING

A. TROUBLE ISOLATION AND CORRECTION (Cont)

1. TROUBLESHOOTING GUIDE (Cont)

QUESTIONS	YES	NO
6c. With teleprinter in full duplex, S/R, terminal on-line mode, is sent data received? NOTE: If answer-back send option is enabled (ABsnd = y), message will be preceded by the answer-back, and, when send buffer is empty, only the answer-back will be transmitted after each twenty second time-out.	Enable user programmable reverse channel option as in normal terminal operation (RChnl = y). Remove 403378 interface loopback connector and reconnect data set cable. Check that data set is out of test mode. Go to 7.	Trouble is in teleprinter.
7. Are data messages properly sent and received in terminal on-line mode?	Place in service.	Check user programmable options - Speed StopU, PrTyp, etc. Perform Opcon Self-Test – See How to Operate Manual. If test fails, trouble is in terminal. If test is OK, perform Controller Self-Test – See Page 3-5. If controller LED is not lit (test fails) trouble is in terminal. If self-test is OK, trouble is in external communications device or remote terminal. (If interface loopback test was not performed, the trouble may be in either the teleprinter or external communications device.)

2. <u>CONTROLLER SELF-TEST</u>

An LED, located under the thirteenth bustle air vent slot from the left, is used to indicate controller operation and the result of the self-test routine. The round, black test switch actuator is located under the seventeenth bustle air vent slot from the left. Refer to C. COMPONENT ACCESS, pages 3-10 and 3-11.

To initiate the test, momentarily depress the controller test switch actuator by reaching through the air vent slot with a small, nonmetalic tool such as an orange stick or a plastic rod. The controller LED will flash periodically during the test (approximately 30 seconds) indicating the test is in progress. When the test is concluded (all flashing stops) the LED will be on indicating that the test passed and normal operation may be resumed.

Failure of the controller self-test is indicated if LED is not lit after the test period.

<u>NOTE 1</u>: The controller self-test is independent of the operator console and the printer.

<u>NOTE 2</u>: Information stored in the volatile memory will be lost when this test is performed.

<u>NOTE 3</u>: Ignore any data that may print as a result of this test.

<u>NOTE 4</u>: If the controller LED continues to flash (approximately every seven seconds), the controller test switch may be in its "locked" position. To release the switch, rotate the actuator 1/8-turn counterclockwise.

<div align="center"><u>B. PERIODIC CHECKS, LUBRICATION, AND CLEANING</u></div>

1. <u>GENERAL</u>

This part provides routine servicing procedures for the 43 Teleprinter Tabletop Buffered KSR Station.

Routine servicing should be performed, at the convenience of the customer, at least once a year.

Routine servicing consists of visual checks, lubrication, and cleaning. When performed at routine intervals, the possibility of later troubles will be reduced.

Following the routine servicing, a local and on-line installation checkout should be performed.

2. <u>VISUAL CHECKS</u>

The following areas should be checked for mechanical condition:
  a. Frayed belts on spacing and line feed motors
  b. Worn or frayed ribbon
  c. All cable connectors fully seated (Pages 3-10 and 3-11).
  d. Print head cover fully seated.

B. PERIODIC CHECKS, LUBRICATION, AND CLEANING (Cont)

3. CLEANING AND APPEARANCE

Examine exterior areas for smudges, dust, etc.

Check proper fit of cover. Replace extremely damaged or discolored cover, housing, bustle, etc.

Exterior cleaning should normally be limited to wiping with a soft cloth moistened with a mild detergent. However, in case of ink stained plastic surfaces, a water-less (nonabrasive) hand cleaner or a lather from abrasive bar soap applied with a cloth should be used.

Interior areas should be examined with the cover opened and accumulations of paper dust or ribbon fragments cleaned by carefully brushing loose material onto a cloth. Ink stains or deposits on interior surfaces, ribbon rollers, platen, etc, can be wiped with a cloth dampened in mineral spirits.

WARNING: DO NOT ALLOW MINERAL SPIRTS OR SOLVENTS TO CONTACT PLASTIC SURFACES.

4. LUBRICATION PROCEDURES

The printer can be lubricated by opening the cabinet cover. Apply lubricant to points as indicated.

On small parts, a minimum amount of lubricant should be applied so that the lubri-cant remains on the parts and does not run off.

Excessive lubricant should be removed with a dry, lint-free cloth. The following areas must be kept dry, free of all lubricant: All electrical components, includ-ing terminals. All parts normally touched by the operator, including exposed surfaces in ribbon, paper handling areas, and all large flat areas.

The following symbols indicate the quanity of lubricant to be used in a specified area: Symbols 01, 02, 03, etc, refer to 1, 2, 3, etc, drops of oil.

The following list of symbols applies to the lubrication instructions and the type of lubricant to be used:

  O Oil 88970 (1 qt), 88971 (1 gal).
 G-A Apply thin film of 97116 (4 oz) or 88973 (1 lb) grease.
 G-B Apply thin film of Syn-Tech grease (use 430836 tube with grease and
   430838 brush).
 G-C Fill with Poly Oil grease (use 430837 injector with grease).
  S Saturate felt oilers, washers, and wicks with oil.
  D Keep dry, no lubricant permitted.

Lubrication Check List: (See Pages 3-8 and 3-9)

Lead Screw -- Film of grease over entire threaded portion of lead screw.
Carriage Wicks -- Saturate with oil (4 places).
Ribbon Guide Rollers -- 2 drops of oil (2 places).
Ribbon Rollers -- 2 drops of oil (2 places).
Ribbon Tension Arm Pivot and Spring -- 2 drops of oil each (4 places).
Spacing Tension Arm Pivot, Roller and Spring -- 2 drops of oil each (4 places).
Platen Bearing -- 5 drops of oil each side (2 places).
Finger Pivots -- 2 drops of oil each side (2 places).
Lead Screw Pulley Clip -- Grease between clip and lead screw shaft.
Pressure Roller Bail Spring -- 2 drops of oil each end (2 places).
Platen Tray Shaft -- 2 drops of oil each end at the side plates (2 places).
Pressure Roller Bail -- 2 drops of oil each end at pivot points on each side of bail (2 places).

Carraige and Nut Engaging Surfaces:
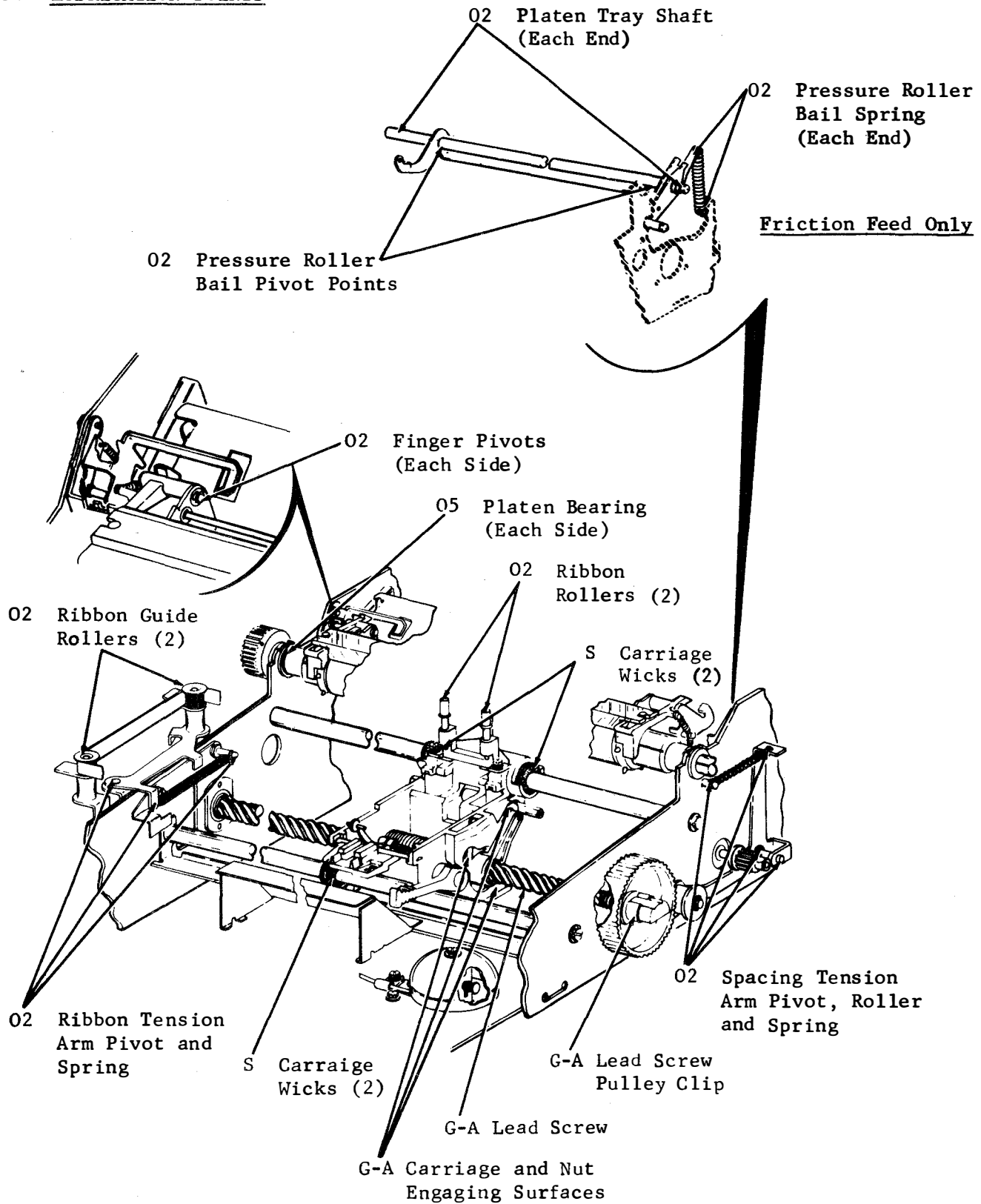
  a. Two Nut Drive Arms -- Grease four bearing surfaces.
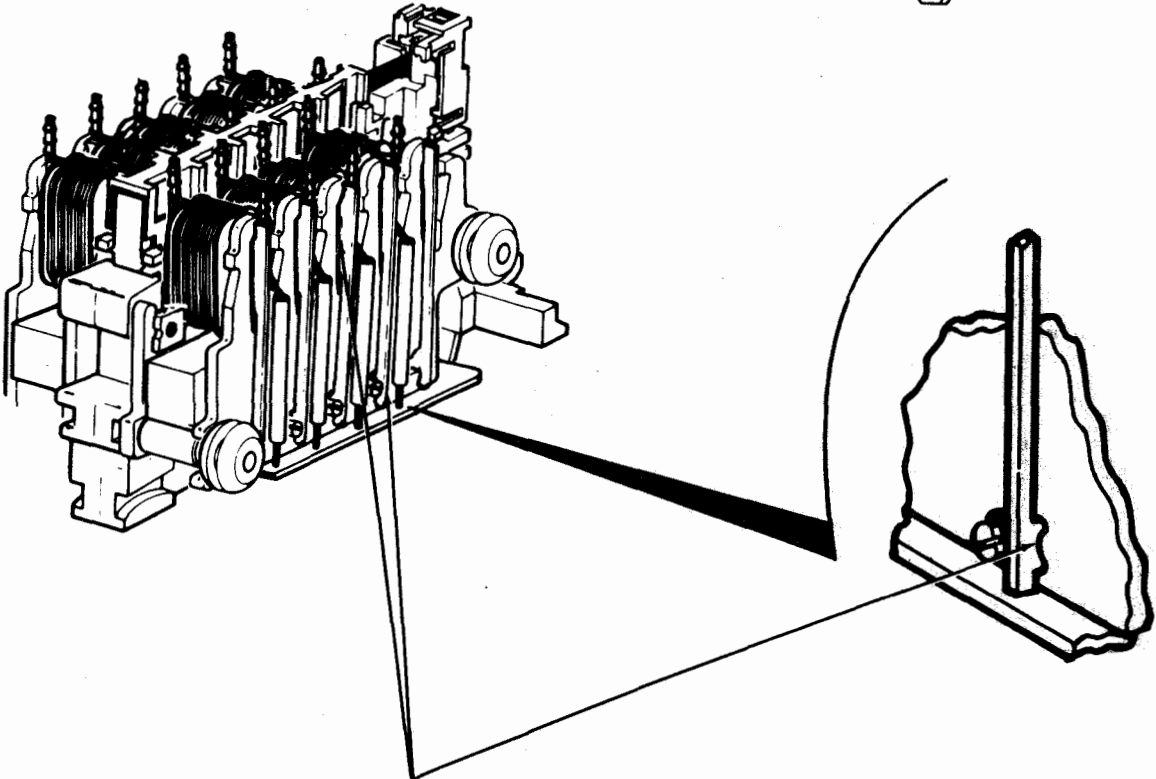 b. Nut keying Arm -- Lubricate by packing carriage engaging slot with grease.

Print Head:

  a. Active Armatures and Outer Pole Plate -- Grease at the upper pivot area as well as the lower locator area (9 places).
  b. Print Wire Well Area -- Completely fill with grease.

B.   PERIODIC CHECKS, LUBRICATION AND CLEANING (Cont)

5.   LUBRICATION POINTS

02 Platen Tray Shaft
(Each End)

02 Pressure Roller
Bail Spring
(Each End)

Friction Feed Only

02 Pressure Roller
Bail Pivot Points

02 Finger Pivots
(Each Side)

05 Platen Bearing
(Each Side)

02 Ribbon
Rollers (2)

S Carriage
Wicks (2)

02 Ribbon Guide
Rollers (2)

02 Ribbon Tension
Arm Pivot and
Spring

S Carraige
Wicks (2)

02 Spacing Tension
Arm Pivot, Roller
and Spring

G-A Lead Screw
Pulley Clip

G-A Lead Screw

G-A Carriage and Nut
Engaging Surfaces

G-C Print Head Well Area
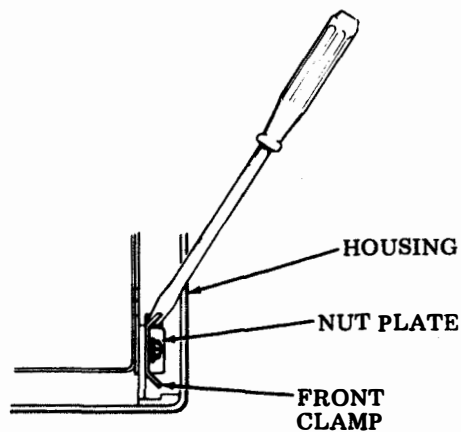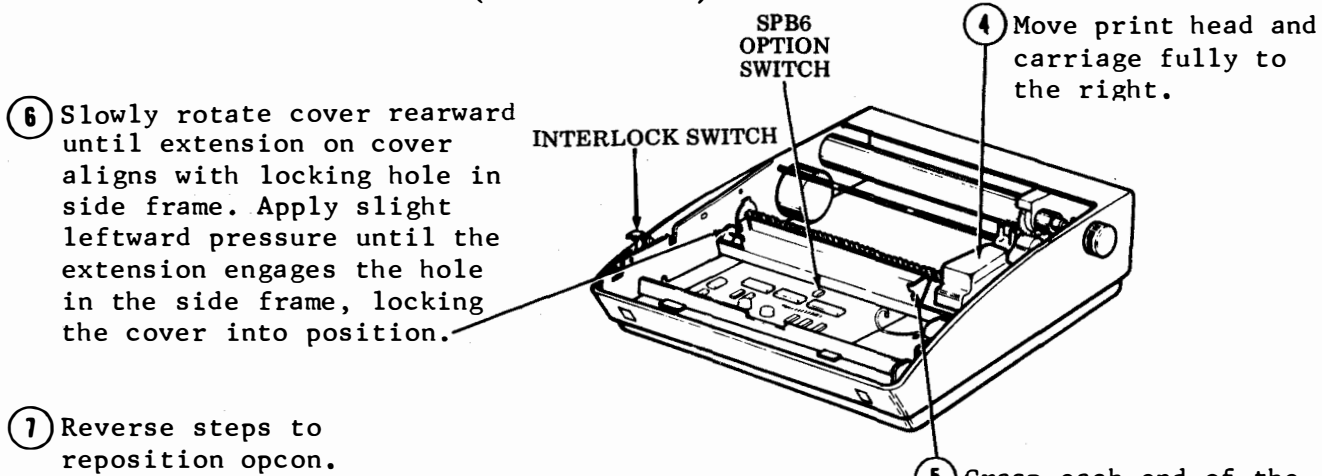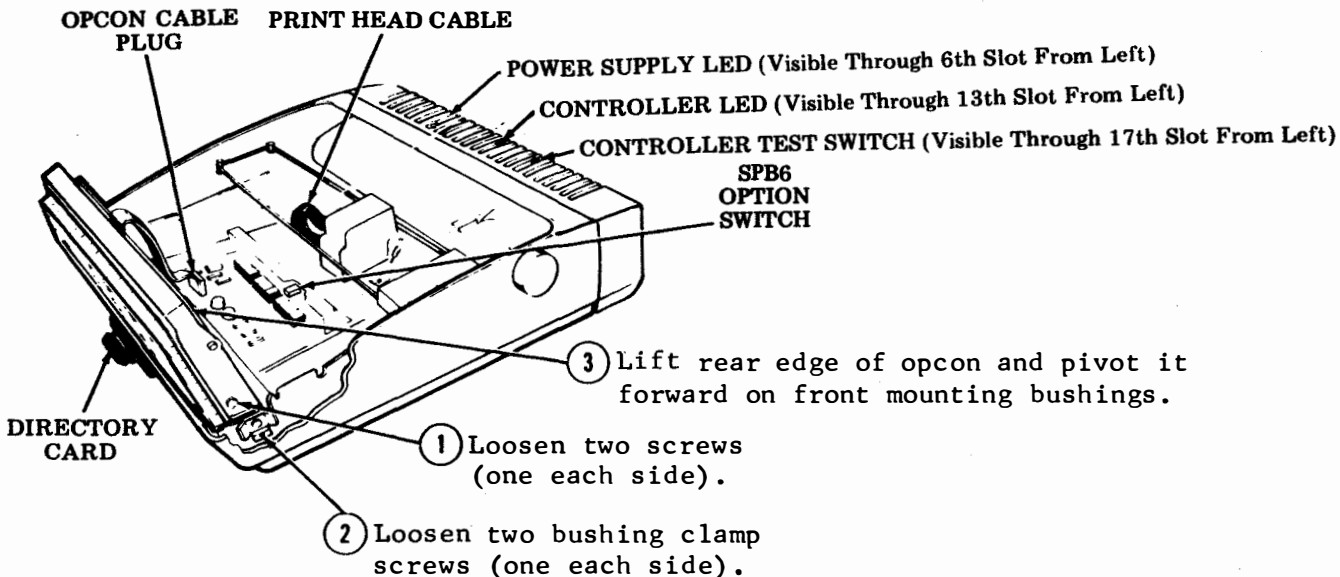
G-B Print Head Active Armatures
and Outer Pole Plates

C. COMPONENT LOCATION AND ACCESS

1. OPERATOR CONSOLE, PRINTER, LOGIC CARD, SWITCHES AND INDICATORS

OPCON CABLE PLUG   PRINT HEAD CABLE

POWER SUPPLY LED (Visible Through 6th Slot From Left)

CONTROLLER LED (Visible Through 13th Slot From Left)

CONTROLLER TEST SWITCH (Visible Through 17th Slot From Left)

SPB6 OPTION SWITCH

DIRECTORY CARD

③ Lift rear edge of opcon and pivot it forward on front mounting bushings.

① Loosen two screws (one each side).

② Loosen two bushing clamp screws (one each side).

SPB6 OPTION SWITCH

④ Move print head and carriage fully to the right.

INTERLOCK SWITCH

⑥ Slowly rotate cover rearward until extension on cover aligns with locking hole in side frame. Apply slight leftward pressure until the extension engages the hole in the side frame, locking the cover into position.

⑦ Reverse steps to reposition opcon.

⑤ Grasp each end of the logic card front cover and push outward on the sides until the locking tabs are free of the logic card.
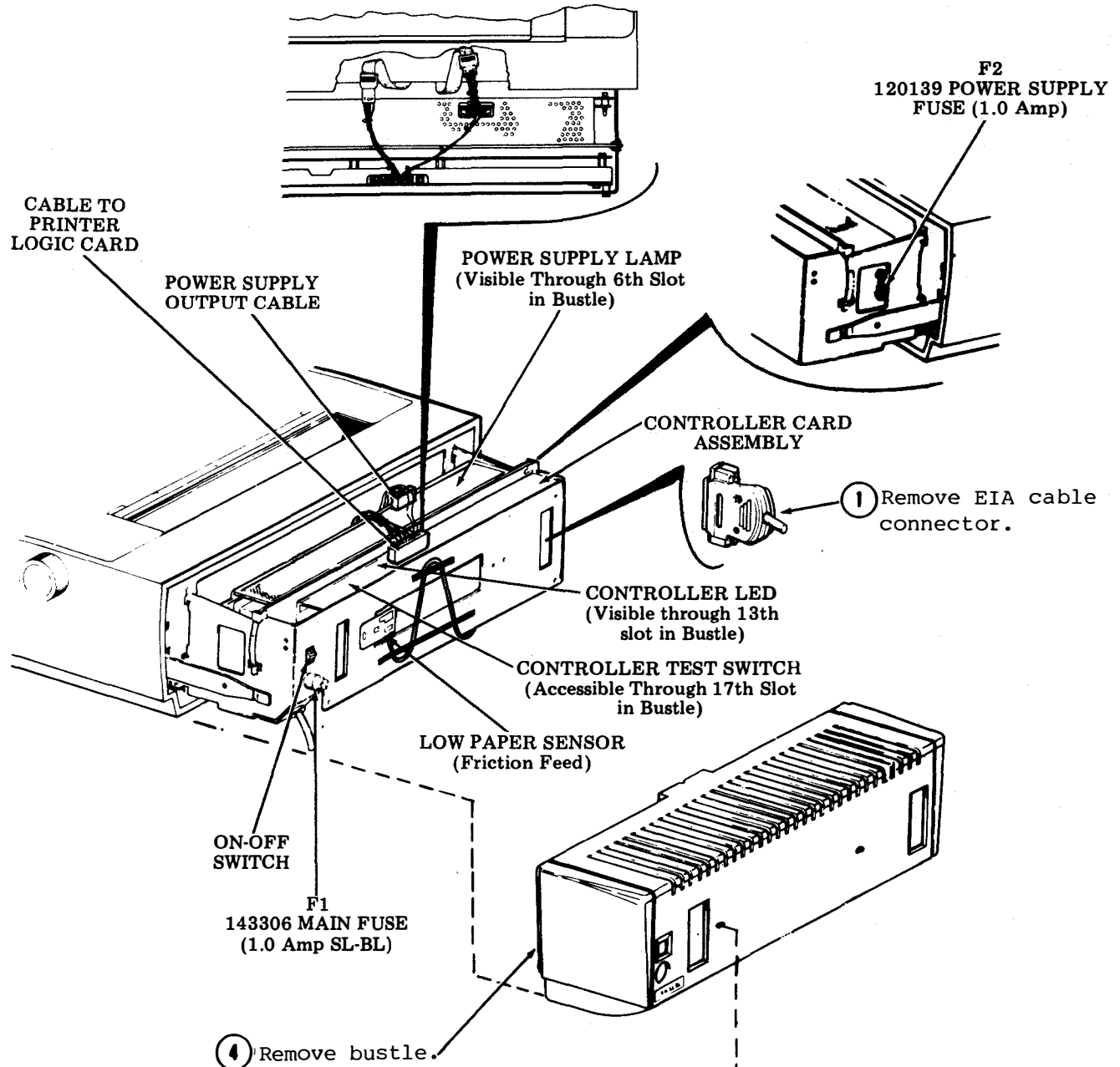
HOUSING

NUT PLATE

FRONT CLAMP

NOTE: When repositioning opcon, insert a screwdriver into the square hole in the nut plate and gently twist (or pry) the screwdriver with enough force to draw the assembly forward.

CAUTION: DO NOT OVERTWIST THE SCREWDRIVER.

Tighten the clamp screws.

2. POWER SUPPLY LAMP AND FUSE, CONTROLLER CARD ASSEMBLY CABLE, LAMP
AND TEST SWITCH

F2
120139 POWER SUPPLY
FUSE (1.0 Amp)

CABLE TO
PRINTER
LOGIC CARD

POWER SUPPLY
OUTPUT CABLE

POWER SUPPLY LAMP
(Visible Through 6th Slot
in Bustle)

CONTROLLER CARD
ASSEMBLY

① Remove EIA cable
connector.

CONTROLLER LED
(Visible through 13th
slot in Bustle)

CONTROLLER TEST SWITCH
(Accessible Through 17th Slot
in Bustle)

LOW PAPER SENSOR
(Friction Feed)

ON-OFF
SWITCH

F1
143306 MAIN FUSE
(1.0 Amp SL-BL)

④ Remove bustle.

③

②

② Remove paper and paper supply assembly,
if present. To remove paper supply
assembly, disengage latch from mounting
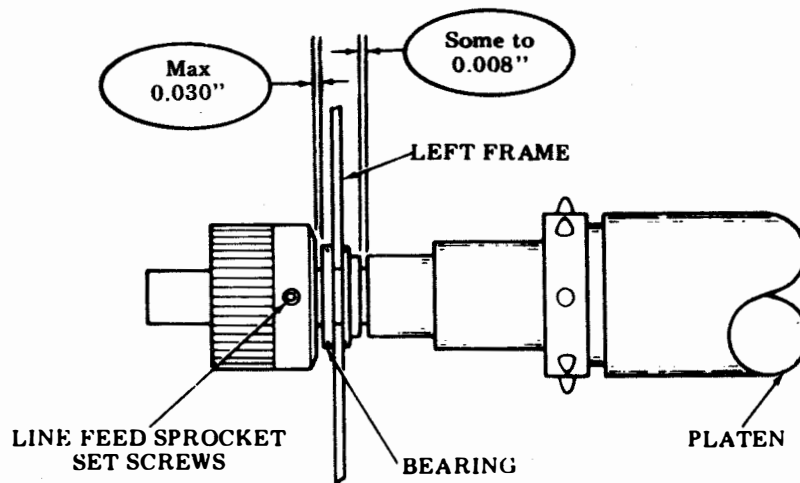posts and pull straight up. Slide off
of mounting posts.

③ Remove mounting posts.

②
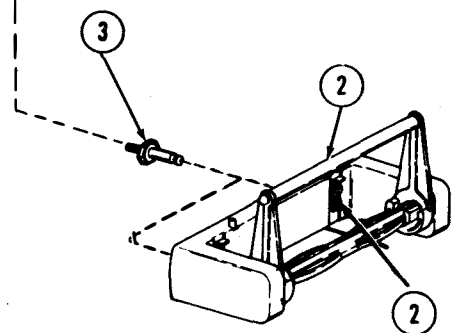
D. ADJUSTMENTS

1. PLATEN ENDPLAY

Requirement
  With the platen biased to the right, there should be
    Min Some---Max 0.008 inch
  clearance between the left bearing and the platen hub, at the closest point, and
    Max 0.030 inch
  between the left bearing and the sprocket at the closest point.

To Adjust
  Loosen line feed sprocket set screws and position.