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SERVICE ADVICE INDEX

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NOTE: All numbers not included in this index are either obsolete or will be found in another Terminet Service Book volume.

## Terminet 300 Updates

Attached is a set(s) of the latest Service Advices for the Terminet. Some of the Service advices have not been distributed since they are not applicable to the Datacom 300. Some service advices have been issued for informational purposes only; these are

#57	Single Point Tabulation
#74-2.0A	New Data set Cable
#74-12.0	Fault Isolation of Terminet 300 and 1200 Printers with Current Interface Option
#74-14.0	TCA forward Motor Speed Adjustment
#74-17	Instructions for Replacing AC Reelers with New DC Reelers - Left & Right Adjustments & Servicing DC Reelers

TO:

SUBJECT

KIF Board and Keyboard Modification

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

TAB

NO.

Field Modification #1

1

1. Equipment Affected:

Terminet 300 Printer All KSR Models  
Serial Nos. 926001004 through 946001115

2. Parts or Assemblies Affected:

New Parts Required:	44B412169-G03/003	Qty. 1	KIF PC Board
	44A410376-G01	Qty. 5	"I" Cores (In Keyboard Assembly)
Old Parts Discont:	44B412169-G03/001	Qty. 1	KIF PC Board
	44B412169-G01	Qty. 1	KIF PC Board
	44A410016-G01	Qty. 5	"I" Cores

Description of Change:

1. Replaces the present KIF board with a new KIF board having improved electronics including a new amplifier and an improved upper/lower case switch.
2. Replaces 5 of the standard keyboard "I" cores with 5 "I" cores which have a mylar shim on the face of the core.

The new KIF board is usable on any machine whether the keyboard change (shimmed "I" cores) is performed or not. No signal margin benefit is obtained, however, unless the shimmed "I" cores are installed.

The old model KIF board can no longer be used on a machine which has the shimmed "I" core mod. It is recommended that all old KIF boards be discontinued and replaced.

4. Reason for Change:

Margin of keyboard signal strength over "noise" is increased when two keyboard keys are depressed at once as in the case of using "escape", "control", "repeat" and "shift" keys together with another key.

5. User and Service Instructions:

Parts to accomplish this modification are furnished at no charge. Customers who elect to use this modification must return the old parts within 6 months, otherwise they will be billed for the new parts.

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TO:

SUBJECT

KIF Board and Keyboard Modification

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

TAB

NO.

Field Modification #1

1

5. User and Service Instructions (cont.)

Field User Change Information - affects:

- a. Documentation: Title - Parts Manual GEK-14999 Page 3, 22, 34
- b. Estimate Man Hours Labor Required: 30 minutes
- c. Parts to be returned to CCDD: (1) 44B412169-G03/001 KIF Board or  
(2) 44B412169-G01 KIF Board

Ship return parts to: TermiNet 300 Modification Parts Receiving  
General Electric Company  
Waynesboro, Virginia 22980

CCDD will pay freight on new parts out and old parts returned.

- d. Spares - action to take: Replace all old KIF boards in shelf stock and in parts kits.
- e. Estimated Ship Date of field change kits - February 1, 1970
- f. Serial Nos. in field affected: SN 926001004 to 946001148. (A few serial nos. after 946001115 may have been shipped without the mod.)

Procedure to Install Field Change:

1. With power off, remove rear bustle and old KIF board. Place printer in vertical position resting on rear frame.
2. Remove bottom keyboard cover. Remove senseline board assembly from keyboard by removing mounting screws.
3. Remove the regular "I" cores from bail arms of escape, repeat, control, and shift (two on shift) keys. They are only held by a clip and can be gently removed with fingers or needle-nose pliers.
4. Snap on new shimmed "I" cores in position of old cores removed.
5. Reinstall senseline, bottom keyboard cover and return printer to normal position.
6. Install new KIF board and replace rear bustle cover. Note: When keyboard has been modified, old KIF will no longer work properly.
7. Return old parts to GE Company as per paragraph c above.
8. When this modification work has been completed, place Mod 1 "I" core decal on bottom cover of keyboard.

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TO:

**SUBJECT**

Modification Instructions  
Addition of Ground Straps around Shock  
Mounts

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

**TAB**

Field Modification #2

**NO.**

2

1. Equipment Affected:

Terminet 300 Printer      All KSR Models  
Serial Nos. 926001004 - 951001227

2. Parts or Assemblies Affected:

New Parts Required: 44A410405-001, Qty 4, Ground Straps  
Old Parts Discontinued: None

3. Description of Change:

Adds a "U" shaped flexible metal grounding strap around the rubber shock mounts which support the printer frame on the lower case.

4. Reason for Change:

Inhibits the build up of static charge on the printer frame by providing a ground path to the printer case.

5. User and Service Instructions:

- a. Documentation: Title - Parts Manual GEK-14999      Page 2
- b. Est. Man Hours Labor Required: 30 minutes
- c. Parts to be returned: None
- d. Spares - No action required
- e. Est. Ship Date of field change kits: February 1, 1970
- f. Serial Nos. in field affected: SN 926001004 to 951001226

Procedure to Install Field Change:

- 1. Remove power from terminal.
- 2. Remove printer frame from lower half of case
- 3. Remove 4 rubber mounting shocks from lower half of case.
- 4. Slip one ground strap around each of 4 rubber shock mounts so bolts through shock mounts pass through openings in grounding straps.
- 5. Sand or grind surface of lower case around shock mount bolt holes so ground straps will make good conducting contact.
- 6. Reinstall shock mounts with ground straps on them.
- 7. Reinstall printer back in lower half of case. Resistance to from frame to case should now be near zero. Check to insure a good contact has been made.

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TO:

SUBJECT

Data Set Cable Modification

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

TAB

Field Modification #3

NO.

3

1. Equipment Affected:

Terminet 300 Printer All KSR Models  
Ser. Nos. 926001004 thru 002001337

2. Parts or Assemblies Affected:

New Parts Required: 44B412349-G01 Qty. 1 Name: Data Cable  
Old Parts Discont: 44B412183-G01 Qty. 1 Name: Data Cable

3. Description of Change:

Replaces old data set cable between the printer and the data set. The new data set cable has capacitors built into the plug end which plugs into the printer. New cable has decal with identifying part number on plug and fits any machine.

4. Reason for Change:

Filters out any electrostatic disturbances on incoming data set cable which might affect control.

5. User Service Instructions:

Documentation: Title - Parts Manual GEK-14999 Page 33  
Estimate Man Hours Labor Required: 5 minutes  
Spares - return to CCDD for credit  
Estimated Ship Date of Field Change kits: February 1, 1970  
Serial Nos. in field affected: SN 926001004 to 002001336

Procedure to Install Field Change:

1. Remove power from printer and data set.
2. Remove old data cable.
3. Install new data cable.
4. Ship old cable to CCDD as per paragraph below.

6. Shipping and Return Parts Information:

Ship 44B412183-G01 (Old Data Cable) to: Terminet 300  
Modification Parts Receiving  
General Electric Company  
Waynesboro, Virginia 22980

Parts to accomplish this modification are furnished at no charge. Customers who elect to use this modification must return the old parts within 6 months, otherwise they will be billed for the new parts.

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CO:

**SUBJECT**

- I. T&A Board
- II. Identification Tags (Labeled stickers)

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

<b>TAB</b>	<b>NO.</b>
Service Instruction 1 & 2	4

I. T&A Board

- a. Equipment Affected: TermiNet 300 Printer  
Serial Numbers 926001004 through 951001275
- b. Parts Affected: T&A Board 44B412161-G01..
- c. Description of Change:

Remove factory test jumper 1J and 2J on T&A Board. These jumpers are used for factory test and should not be on board in terminal operation. Jumpers can be snipped with a small pair of diagonal pliers when service person is performing routine maintenance.

II. Identification Tags

- a. Equipment Affected: All TermiNet 300 Printers
- b. Parts Affected: New Parts required - Identification Tags for
  - a. Dataset plug & Receptacle
  - b. Reader plug & Receptacle
  - c. Punch plug & Receptacle
- c. Description of Change:

Add ID tags above plug connection. Dataset - Right rear of terminal.  
Reader - Left rear of terminal next to bustle.  
Punch - Left rear of terminal outside plug.

d. Reason for Change:

An alarming number of reports have been received where the dataset plug and reader plug have been interchanged. This results in damage of printed circuit boards.\*

- \* Caution: a. When changing printed circuit boards insure that boards are in correct slot with components toward left side of terminal.\*\*
- b. Power should not be applied with boards removed from terminal.
- c. Do not remove boards with Power On.

\*\* As viewed from the front of terminal.

<b>PREPARED BY</b> John L. Currie	<b>ISSUED BY</b> R. A. Prudhomme	<b>DATE</b> 2/3/70	<b>SUPERSEDES ISSUE DATED</b>	<b>PAGE</b> 1 of 1
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TO:

SUBJECT

Reader and Punch Drawer Installation  
ASR Desk Model Data Communication Printer

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

TAB

Service Instruction #3

NO.

5a

Equipment Affected:

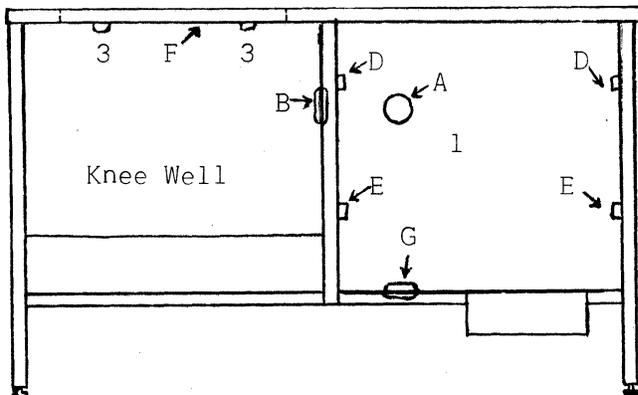
ASR Desk Model Data Communication Printer. Punch and Reader drawers are shipped separately from the desk. They are completely assembled both electrically and mechanically and need only to be inserted into the desk with the proper cable routing as described below. A view of the completely assembled unit is shown in figure 1 page 3 of GEH 2185 Service Manual.

Refer to Front View Desk Fig. 1

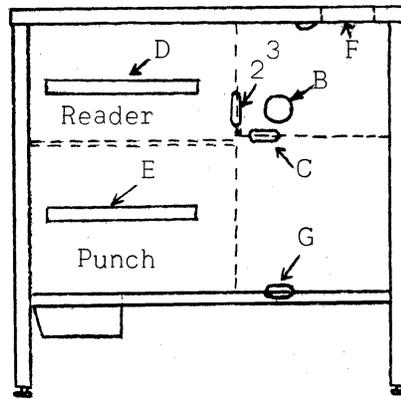
PUNCH

1. From the front of the desk, remove clamp #1.
2. Pull drawer runners (E) out as far as possible and place the punch drawer on the runners. Push the drawer approximately half-way in, then pull runners out until the punch drawer drops solidly onto the runners.
3. Hold the two cables above the back of the drawer and push the punch drawer in until it locks solidly against the magnet.
4. On the punch cable, there are two taped bands around the cable. Place clamp #1 over both cables at the taped band nearest the drawer. (Insulator should be inserted between clamp and cables.)

Front View Fig. 1



Right Side View Fig. 2



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Reader and Punch Drawer Installation  
ASR Desk Model Data Communication Printer

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

TAB

Service Instruction #3

NO.

5a

5. Pull drawer out approximately half-way and install clamp #1 in position.
6. Before tightening clamp, place both cables through hole (A). Position clamp in a horizontal position and tighten clamp securely.
7. Open and close drawer several times to insure that the cable flexes downward and away from the magnet assembly. If cable flexes upward toward magnet, lower cable by hand to change flexing direction. Again, open and close drawer several times to insure proper operation.

READER

1. Set reader drawer on the floor in front of table with the reader cables toward the table.
2. Insert both reader and power cables through hole (A).
3. Pull the two top drawer runners (D) out as far as possible. Place reader drawer on runners and push drawer in approximately half-way.
4. Pull the runners out until the reader drawer seats solidly on the runners, then pull the drawer out until it hits the stops.
5. Facing the back of the desk, remove both back panels on the left side (this may be done by inserting a screwdriver along the seam around the panels and prying the covers off).
6. Insert the two power cords through lower hole (C). Place the reader and punch cable through hole (B).
7. Note the taped areas on the reader and punch cables. Remove clamp #2 and place over these taped areas, then install clamp securely.
8. In front of the rectangular cut-out (F) under the top of the desk are two plastic cable clamps (#3 Fig. 1). The clamps can be opened and the reader and punch cables snapped in by hand.
9. Set terminal on the desk top with the bustle overhanging cut-out (F).

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Reader and Punch Drawer Installation  
ASR Desk Model Data Communication Printer

**COMMUNICATION AND CONTROL  
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SERVICE ADVICE**

**TAB**

Service Instruction #3

**NO.**

5a

10. Connect the reader and punch cable directly to the terminal. (Both reader and punch cables connect at the left rear of the terminal. (See Fig. 34, Page 33, GEH 2185.)
11. Attach power cord to terminal and drop through opening (F). Run this cord through hole (B) with the reader and punch cables and then down through the lower hole (C) with the other power cords.
12. If the data-set or coupler to be used is to be placed on top of the desk, attach the data-set cable to the terminal and coupler with the cable drooping behind the desk. Run the coupler power cord (Fig. 18, Page 14, GEH 2185) along the same route as the terminal power cord.
13. If the data-set is to be placed in the opening behind the reader drawer, route the data-set cable through the opening with the terminal power cord. The data-set power cord may be routed through the lower opening (C) to the outlet box.
14. Located in the lower opening behind the punch drawer is an outlet box with power cord attached and the power cables from the reader, punch, terminal and data-set. Plug the reader, punch and terminal power cords into the outlet box.
15. Run the power cord for the outlet box through the lower opening (G) and after all installations are made insert this cable into a grounded 115V outlet.
16. Snap the covers over the two openings at the back of the desk.
17. At the front of the table a switch located at the right side of the knee opening is used to apply power to the terminal, reader, punch and data-set.

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GENERAL SERVICE INSTRUCTIONS

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

TAB

SERVICE NEWS LETTER #1

NO.

6

A service Advice such as this containing TermiNet 300 "service hints" will be issued periodically. The topics will be general in nature and should be helpful to all service and maintenance personnel. These News Letter Service Advices will not replace regular formal Service Advices covering modifications, parts changes and service procedures but will supplement them to provide service instruction not yet provided by revisions of the regular TermiNet 300 Instruction Manuals. These should be filed in your regular TermiNet 300 "Service Advice" folder.

IDENTIFICATION OF CABLE CONNECTORS AND RECEPTACLES:

Beginning just recently all connectors and receptacles are receiving identification stickers at the factory to properly identify them to help users from "cross plugging" into wrong receptacles.

In addition, all users were mailed extra stickers (on Service Advice No. 4) for machines already delivered. If you did not receive yours, write to TermiNet 300 Product Service at Waynesboro for the amount of sets you need for your reader, punch and data set connectors.

SHORTING PROTECTION FOR ANSWERBACK BOARD

Some reports were received that the metal diode case cover on the Answerback board would touch the solder tails of the adjacent SPC board and cause shorting damage and fuse blowing. If this occurs on your machine, or if the spacing between the ANS diode case and the SPC board appears marginal, cover the surface of the diode case with strips of a good insulating tape to insulate it. Production ANS boards are now protected.

NYLON BUSTLE STRAP

Recently production added a thin white plastic nylon strap approximately  $\frac{1}{4}$ " wide at the center of the bustle board compartment to prevent vertical separation of the upper and lower board guides. Spreading could possibly allow loosening of printed circuit boards in their respective guide slots.

This strap was inadvertently marked "shipping strap" on the first units shipped. This strap is not just a shipping strap. It should stay on the bustle. Production has corrected this. Scratch off or remove the words "shipping strap" on this nylon strap.

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GENERAL SERVICE INSTRUCTIONS

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

TAB

SERVICE NEWS LETTER #1

NO.

6

GRAPHITE LUBE PREVENTS PRINT BELT STATIC

Rotation of the print belt around the metal pulleys under certain conditions can generate surface static high enough to adversely effect the control logic of the printer and cause incorrect characters or control functions. Coating both sides of untreated plastic print belt with a light coat of liquid graphite can prevent this. Surface lubrication is improved too. Production belts are now treated. Should the problem of static arise on untreated belts already in the field, they can be coated by hand once. Use very sparingly as a one time application. Do not apply second coats - even to the factory treated belts. Do not use just any common variety! The Data Communication Department will supply any user a container of this special formula graphite with instructions if the need for it arises.

A symptom of static buildup is the switching over of the machine from "on-line" to "standby" or "local", usually accompanied by an alarm and interrupt.

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TO:

SUBJECT

LUBRICATION INSTRUCTIONS

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

TAB

SERVICE INSTRUCTION #4

NO.

10

This will supplement lubrication schedule in GEH-2185 to recommend periodic lubrication.

Lubricate the following points with No. 10SAE oil each 500 hours or 6 months, whichever occurs first.

<u>LUBE POINT</u>	<u>QUANTITY</u>	<u>METHOD</u>
1. <u>Rear Idler Pulley (rear)</u>	2 Drops	Remove belt, remove pulley, wipe bearing clean, use no solvents, wipe shaft clean and clean with alcohol, apply two drops of oil. Reinstall pulley and wipe off any excess oil.
2. <u>Jack Shaft Bearing (left)</u>	2 Drops	Drop two drops of oil between line feed clutch ratchet and side frame.
3. <u>Jack Shaft Bearing (right)</u>	2 Drops	Drop two drops of oil and shaft adjacent to end of bearing on inside of machine. Wipe off excess oil.
4. <u>Line Feed Clutch</u>	2 Drops	Drop two drops of oil in spring tang oil hole. Wipe off excess oil.
5. <u>Line Feed Idler Gear</u> (Double gear operates off line feed clutch gear)	2 Drops	Remove any dried grease and dirt from oil hole and drop oil in hole. Wipe off excess. If no hole put on shaft at ends of gear.
6. <u>Fractional Line Space Gear</u> (Double gear which engages platen drive gear slides out when platen knob is pushed in)	2 Drops	Depress knob to disengage fractional line space clutch gear. Drop oil between gears to shaft. Depress platen knob and rotate to work oil in. Repeat several times. Wipe off excess oil.
7. <u>Ribbon Lift Arm Shaft</u>	1 Drop	One drop oil at each bearing. Wipe clean.
8. Ribbon Drive Lube 2 Gears (left & right ribbon mechanisms)	Silicone Grease	Remove ribbon drive mechanism. Wipe entire mechanism clean. Apply small amount of grease to shaft and to side of ratchet gear which rubs side plate.
(1) Drive Pinion Gear (Engages jackshaft belt pulley - is approximately 5/16 in diameter)		
(2) Ratchet Gear (meshes with drive Pinion Gear)		

PREPARED BY

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DATE

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PAGE

R. A. Prudhomme

3/26/70

1 of 1

TO:

SUBJECT

FIELD MODIFICATION OF PUNCH BOARD (PCH)  
PN 44B412172-G01  
Terminet 300 ASR MODELS

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

TAB

Field Modification #4

NO.

11

1. Equipment Affected:

Punch Unit  
Terminet 300 ASR Desk Models 3S3010  
Serial Nos. 935801002 through 020801238

2. Machines Affected:

Same machines in the serial number range given above could have the defect symptom described below. If the Punch board in any given ASR unit does not exhibit the defect symptom described below, there will be no modification required on the board and this information can be disregarded.

Any Punch board having the problem described below should be returned to DCP - CCDD, Waynesboro, Virginia to be exchanged for a modified board with "Mod 3" incorporated. Phone or write Product Service, Waynesboro, if a new Punch board is needed.

3. Parts Or Assemblies Affected:

Punch Board Part No. 44B412172-G01

4. Description of Change:

Adds components to Punch board which changes configuration of board and identifies new board with "Mod 3" sticker.

5. Reason For Change:

If power to terminal is turned off without removing power from Punch, it is possible to blow the AC primary fuse on the Punch power supply or vaporize a trace on the PCH board. A "delete" will be punched when this happens, although delete punching without permanent damage may occur.

During tape feed, some ASR units will punch unwanted bits instead of nulls. Addition of a Capacitor and removal of a Resistor eliminates this problem.

6. Return Boards:

Ship any return boards to : Terminet 300 Parts Receiving  
General Electric Company  
Waynesboro, Virginia 22980  
Mark: Modification Return Parts

PREPARED BY

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DATE

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R. A. Prudhomme

6/8/70

1 of 1

TO:

SUBJECT

PREVENTING UNNECESSARY SERVICE CALLS

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

TAB

Service Instruction #5

NO.

12

When making service calls on the TermiNet 300 Printer, a few extra minutes spent at the location to look at several obvious areas on the printer could prevent an unnecessary service call in the future.

Suggested areas to observe and simple methods of checking are as follows:

1. Left and Right Drive Belts - with your finger, press on belt to check tightness. Should deflect approximately 1/8" to 1/4".

A loose belt will cause extra "play" in the system and can cause finger snagging. A tight belt will cause jack shaft bearing failure, rear idler bearing failure and will cause the machine to go to "Standby" after warm-up.

2. Line Feed Clutch - does it look dry. If so, place one or two drops of light oil in the spring tang cut-out.
3. Rear Idler Pulley - place a drop of oil at the bearing.
4. Check paper shield for breakage.
5. Check each key from keyboard and listen for beep. This will check for broken cores.
6. Type character, line feed, character, line feed, etc. and check for uneven line feeds or line spacing. Perform this check for both single and double line feed switch positions.
7. During double line feed condition, check dancer bar to see that it does not bottom. If it does, there is too much friction at the paper roll and will cause uneven line feeds.
8. Look down the row of fingers and check for bent fingers.
9. While holding fan blade stationery, move print belt and check for looseness in system. Too much "play" indicates loose drive belts or a loose pulley.
10. Run the left drive belt off of the front pulley and check for freedom of print belt in the belt guide. If the belt is too tight, the machine will cut off after warm-up.

PREPARED BY

E. L.Hammers

ISSUED BY

R. A. Prudhomme

DATE

5/28/70

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PAGE

1 of 2

TO:

SUBJECT

PREVENTING UNNECESSARY SERVICE CALLS

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

TAB

Service Instruction #5

NO.

12

Suggested areas to observe and simple methods of checking (con't):

11. Push "Here Is" if included, check timing of print-out.
12. Check machine for noise. Any abnormal noise usually indicates misadjusted or loose parts.
13. Check ribbon reverse mechanism.
  - a) Is the "E" ring cutting into the drum at the center of ribbon spool?
  - b) Check the teflon washer between the large gear and the mounting plate for doubling or tearing. If so, remove or replace.
14. Insure that all field modifications have been performed.

PREPARED BY  
E. L. Hammers

ISSUED BY  
R. A. Prudhomme

DATE  
5/28/70

SUPERSEDES  
ISSUE DATED

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2 of 2

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

**SUBJECT**

PUNCH ADJUSTMENTS

**TAB**

Service Instruction #6

**NO.**

13

Product Service does not recommend the tearing down and internal adjustments of the Invac Punch by service personnel because of the time involved. We have listed several recommended adjustments. If any problems are encountered beyond this point, the Punch should be replaced. To return Punch, refer to Service Advice #7a.

Refer to GEH-2185 Service Manual, Page 38, Figure 39.

1. The chad cover, Part #2, may be removed for cleaning or repair. The cover is held by screw #1 and can be removed without removing the Punch from the drawer.
2. The Punch die (Part #4) may be removed for cleaning by first removing the Punch from the drawer and then removing the Punch cover. Remove two screws, (Part #3) and lift die straight up from base.
3. To insure that the punched holes are evenly spaced from the edge of each side of the tape, loosen screw (Part #13) and move the tape in toward the body of the Punch until the tape rests against the guide edge of the die. With the tape in position, move (Part #13) against tape and tighten screw.
4. The rear hold-down clamp (Part #61) is used to hold the tape against the die. To adjust, loosen the clamp screw. Push the tape in toward the body of the Punch until the tape rests against the guide edge of the die. With the tape in position, adjust the hold-down clamp (Part #61) until it is just touching the tape. Tighten clamp screw.

If any of the solenoids or drive mechanisms are in need of adjustments or repair, replace the complete Invac Punch Assembly.

PREPARED BY

E. L. Hammers

ISSUED BY

R. A. Prudhomme

DATE

6/5/70

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1 of 1

TO:

**SUBJECT**

BINDING OF THE RIBBON REVERSING TORQUE SHAFT  
CAN CAUSE FAILURE OF RIBBON TO REVERSE

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

**TAB**

Service Instruction #7

**NO.**

15

If the ribbon fails to reverse, the problem could be due to friction in the ribbon mechanism itself or in the ribbon reversing torque shaft which connects the left and right mechanisms. The torque shaft must have sufficient end play and should have free rotation.

Before assuming the reversing mechanism is at fault, check the torque shaft as follows:

1. Remove the "E" ring holding the link to the reversing shaft arm (both sides of machine).
2. Remove the link from the reversing shaft, which connects to the reversing mechanism.
3. Check end-play of reversing torque shaft and set to .007" - .020".
4. Rotate the shaft and make sure it is free and the bearings do not rotate. A drop of ten weight oil may be added to each bearing. If this is not sufficient, replace the bearings.
5. Check shaft for straightness. The shaft should have no more than .010" bow.
6. Attach both links and "E" rings. Left reversing lever should point up and the right down.
7. Loosen set screw holding one reversing lever. Engage one ribbon reversing mechanism and disengage the other. (Move link forward on one and to the rear on the other.)
8. Try rotating gears on the engaged mechanism to make sure the gears are fully engaged.
9. Recheck end play and tighten set screw.
10. Operate terminal and check ribbon reversing. If there is still a tendency to hang during ribbon reversing, the problem will most likely be in the ribbon reversing mechanism.

PREPARED BY

E. L. Hammers

ISSUED BY

R. A. Prudhomme

DATE

8/18/70

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1 of 1

TO:

**SUBJECT**

GEAR TOOTH PAPER SHIELD ROLLERS

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

<b>TAB</b> Field Modification #6	<b>NO.</b> 16
TermiNet 300 Printer	

A new improved paper shield paper roller is now available. The new roller has a sprocketed or toothed effect surface and can easily replace the original smooth type roller.

Some machines with smooth rollers have exhibited the phenomena of the paper looping out in front of the platen. When this occurs the paper may snag print fingers. Should this occur, the problem can be corrected by replacing the smooth rollers with the new sprocket type.

This new roller part number 44A410554-001 is approximately the same size as the old smooth surface roller but has the effect of keeping the paper snug against the platen.

PROCEDURE TO INSTALL

1. Turn off machine power.
2. Lift the paper shield and hold firmly in an upright position.
3. Place cloth over rubber platen and print finger area to catch any parts which might accidentally be dropped into interior of machine.
4. Use the flat side of a screwdriver blade to push the old roller out the back side of the shield.

NOTE: Pressing on one side of a roller will usually release one end of a roller shaft which is all that is needed.

5. Slip the smooth roller off the shaft and slide on the gear type\* roller.
6. Press the roller shaft back into its slot.
7. Discard old rollers or keep for spares.

\* Lube the interior of the new roller with mineral oil prior to installing. Apply a minimum of oil with the end of a toothpick or a fine wire and wipe clean. Use a light mineral oil in the 5 - 10 weight range which has no additives.

The new sprocketed rollers will be supplied upon request when the attached order form or a regular service report form is returned showing the serial number of the machine being serviced.

<b>PREPARED BY</b> John L. Currie	<b>ISSUED BY</b> R. A. Prudhomme	<b>DATE</b> 10/7/70	<b>SUPERSEDES ISSUE DATED</b>	<b>PAGE</b> 1 of 2
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GENERAL ELECTRIC COMPANY  
COMMUNICATION & CONTROL DEVICES DEPARTMENT  
WAYNESBORO, VIRGINIA 22980  
ATTN: D. W. GARBER

Request for gear tooth type paper rollers, part #44A410554-001.

Customer Name \_\_\_\_\_

Address \_\_\_\_\_

Number of Terminals \_\_\_\_\_

Serial Number (s) \_\_\_\_\_

Ordered By \_\_\_\_\_

TO:

**SUBJECT**

PRINT BELT STICKING CAUSING MOTOR  
OFF CONDITION

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

**TAB**

Service Instruction #8

**NO.**

17

- A. To relieve print belt sticking the belt should be sprayed with Miller Stephenson MS122 Aerosol Dry Lubricant. (General Electric Part #44A417371.) \*

The recommended procedure to apply the dry lubricant is as follows:

1. Remove the fluorescent lamp from the machine.
2. With the motor running, spray the inside of the belt at the right side of the machine near the pulley. (CAUTION: Do not spray at left side near the photocell.)
3. The inside of the belt should be coated at the guide rib. An adequate coating can be applied with three to five seconds of spraying.
4. After the lubricant has been applied, measure the resistivity between the moving print fingers and the machine frame. The measured resistance must not exceed 1 megohm. \*\*

The aerosol can should be equipped with a small hose to direct the spray accurately inside the print belt.

- B. Adjustment Of The Rear Belt Guide

1. Belt guide adjustment should be made between the rear guide and the print belt.

Previous clearance between the belt guide and print belt was .003" - .005". This adjustment has been changed and should now be .003" - .008".

\* MS122 may be ordered through General Electric Company, Waynesboro, Virginia, 22980, or through Miller Stephenson Chemical Company, 41 N. Broad Street, Philadelphia, Pennsylvania, 19108.

\*\* Should the resistance between the belt and machine frame exceed 1 megohm, the belt must be cleaned and resprayed or the belt may be wiped to remove enough MS122 to bring the resistance within limits.

PREPARED BY

John L. Currie

ISSUED BY

R. A. Prudhomme

DATE

10/20/70

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TO:

**SUBJECT**

PRINTED CIRCUIT BOARD HANDLING

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

**TAB**

Service Instruction #9

**NO.**

18

Because of possible damage to printed circuit boards, especially those containing chips, the following list of preventive measures should be adhered to:

1. Do not drop or handle boards in a rough manner.
2. Always handle boards by the edge. Handling in any other manner can cause contamination of boards or mechanical damage to components.
3. Do not touch the plated contact fingers. Contamination can cause intermittent contact problems.
4. Do not use plastic sheeting as a base to lay boards on. A possibility exists that a static charge from the plastic can cause chip damage.
5. Do not wrap boards in any kind of plastic because of static charge.
6. When shipping boards, use the special shipping pack that boards are sent to you in, or if these are not available, wrap the boards in aluminum foil before shipment.
7. When storing boards, use the special shipping pack, or wrap in aluminum foil, which protects against dust, dirt, static charge and mechanical damage.

PREPARED BY

E. L. Hammers

ISSUED BY

R. A. Prudhomme

DATE

11/13/70

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TO:

SUBJECT

1. POW Board
2. Line Feed Clutch
3. External Paper Handling System

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

TAB

General Service - Newsletter #2

NO.

19

Applicable to RO, KSR, ASR

1. Group 2 POW Board

A new Group 2 POW board was introduced on all model machines with Production Serial number starting with 049 (1st. week December 1970).

The new G02 POW board is functionally the same as the G01 POW board. The difference between G01 and G02 boards are as follows:

- a. The current limit on the G02 board has been increased.
- b. The current ratings of 1FU, 2FU and 3FU is increased from .75A to 1.5A.

The 1.5A Pico fuse has a GE part number 44A417087-007. This new fuse should not be used in the G01 board. Failed G01 boards returned to the factory on exchange plan will be updated to G02 configurations as standard practice.

2. Line Feed Clutch

A new improved clutch (Part No. 44C417108-001) was introduced on "B" model Printers. The "B" model clutch has longer life, does not require the external anti-backlash spring, and requires no lubrication. Along with the clutch, a "B" model jackshaft (Part No. 44B412469-001), a new left jackshaft bearing (Part No. 44A410515-001), and a new line feed relay (Part No. 44A410166-G02) is installed.

If it is desired to update an "A" model Printer, the above parts may be ordered in kit form (Part No. 44A410516-G01).

If a "B" model jackshaft is used with an "A" model clutch (Part No. 44C414046-G01) a .076" clearance (See figure 1) must be provided between the shoulder on the jackshaft and the clutch. The "A" model jackshaft (Part No. 44B412057-001) and "B" model clutch are incompatible. Figure 1 shows possible line feed clutch and jackshaft combinations.

PREPARED BY

R.K. Wilson

ISSUED BY

R.A. Prudhomme

DATE

2-24-71

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TO:

SUBJECT

1. POW Board
2. Line Feed Clutch
3. External Paper Handling System

**COMMUNICATION AND CONTROL  
DEVICES DEPARTMENT  
SERVICE ADVICE**

TAB

General Service - Newsletter #2

NO.

19

Applicable to RO, KSR, ASR

3. External Paper Handling System

An External Paper Handling System is available at this time as a factory installed option or as a field installed kit. The kit number is 44C414146-G01. The kit includes installation instructions (GEK-15017A and GEK-14775).

NOTE

"B" model Printers have the necessary jack access hole in the case. "A" model Printers require that a hole be drilled in the case. This drilling operation may not be desirable at some customer locations.

The External Paper Handling System provides a means to guide various widths (up to 12 27/32 inches) friction-feed, pin-feed, fan-fold, or roll paper and to hold wide friction-feed or pin-feed paper rolls. There is a switch in the system that indicates a paper-out condition and causes an "Alarm" condition in the Printer.

Attached is publication CCD-1038 for further information on the External Paper Handler.

PREPARED BY

R.K. Wilson

ISSUED BY

R.A. Prudhomme

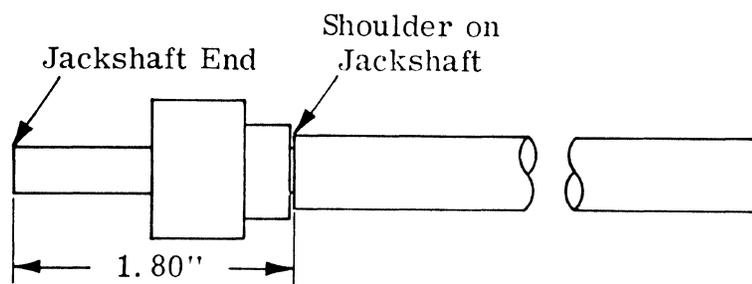
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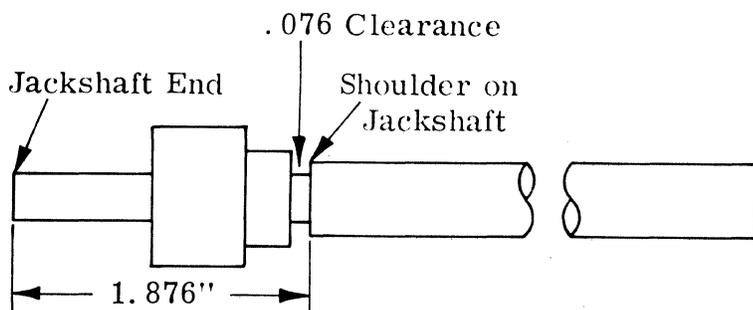
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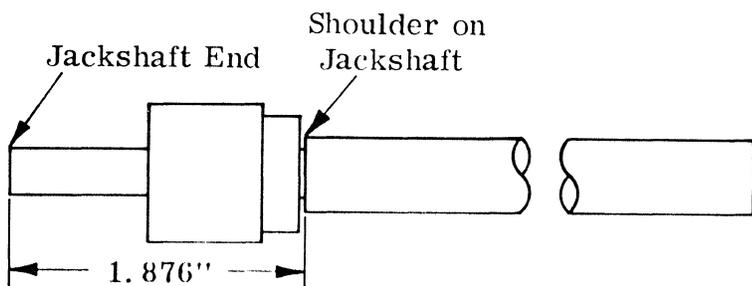
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"A" MODEL LINE FEED CLUTCH AND JACKSHAFT



"A" MODEL LINE FEED CLUTCH AND "B" MODEL JACKSHAFT



"B" MODEL LINE FEED CLUTCH AND JACKSHAFT

Figure 1 Line Feed Clutch & Jackshaft Combinations

**Terminet 300** DATA COMMUNICATION PRINTER  
**SERVICE ADVICE**



Trademark General Electric Company, U.S.A.

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
 WAYNESBORO, VA. 22980 ---TELEPHONE 703-942-8161

<b>TO:</b>  GENERAL DISTRIBUTION	<b>TAB</b>	<b>SUBJECT</b>  DIODE - JUMPER KIT	
		<b>CATEGORY</b> General Service - Newsletter #3	<b>NO.</b> 20

The function of certain Terminet 300 Printed Circuit Boards can be changed by adding or deleting jumpers or diodes. A new diode - jumper kit is now available to aid the serviceman performing these optional changes. This kit can be ordered by requesting Diode - Jumper Assortment #44A410633-G01 and consists of the following items:

<u>QTY.</u>	<u>DESCRIPTION</u>	<u>DRAWING NO.</u>	<u>USED ON</u>
5	Diodes	44A410259-001	ANS Board
5	Diodes	44B232028-001	PSC-ASX Bds.
2	Jumpers	44A410262-001	AUX Board
2	Jumpers	44A410262-002	SPC-MEM Bds.
2	Jumpers	44A410262-005	PCHB Board
5	Jumpers	44A410262-006	R&P-DAT-CLC-PSC-PAR Bds.

**PREPARED BY**  
E. L. Hammers

**ISSUED BY**  
R. A. Prudhomme

**DATE**  
5/5/71

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**Terminet 300** DATA COMMUNICATION PRINTER  
**SERVICE ADVICE**

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
 WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

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<b>TU:</b>  GENERAL DISTRIBUTION	<b>TAB</b>	<b>SUBJECT</b>  TERMINAL GOING TO STANDBY	
		<b>CATEGORY</b> Service Instruction #10	<b>NO.</b> 22

If problems are encountered with the Terminet 300 Printer going from "ON LINE" to "STANDBY", or the print belt cutting off when in "LOCAL", the problem could be the setting of the "SPEED POT" (P-1) on the Protection (PRO) Board is incorrect. To check this setting, proceed as follows:

1. First, check for mechanical binding in the print belt drive system by rotating the print belt by hand.
2. If the print belt is free, apply power to the terminal with the cover open, being careful that nothing gets caught in the print fingers.
3. With your finger, or some suitable object, apply a load to the right side of the print belt, at the pulley. Again, be careful not to touch the print fingers.
4. If a light load applied here causes the belt to cut off, remove power from the terminal and pull out the PRO board.
5. Potentiometer P-1 controls the speed at which the print belt cuts off. Rotate this pot clockwise about one-eighth (1/8) of an inch and insert PRO board into the terminal.
6. Apply power and start the belt.
7. Perform load test in Item #3. More load should be required to stop the print belt, which should cure the cut-off problem.

An alternate method of checking this pot setting by using an oscilloscope would be as follows:

1. With power off, attach a scope probe to TP-2 on the PCA board.
2. Set scope setting to .5 millisecond/division horizontal and 5 volts/division vertical. Sync scope internally on a positive going pulse.
3. Apply power to the printer and start print belt.
4. Refer to Service Manual GEH-2185, Page 53, to compare signals, or GEH-2185A, Page 4-54.
5. Apply a load to the print belt while observing the signal at the scope. You will see the time interval between the leading edge of the first pulse and the leading edge of the second pulse becoming longer.
6. The pot (P-1) on the PRO board should be set so the belt cuts off when the time intervals between the leading edge of the two pulses become 2.6 ms.

**PREPARED BY**

E. L. Hammers

**ISSUED BY**

R. A. Prudhomme

**DATE**

4/28/71

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**Terminet 3000** DATA COMMUNICATION PRINTER  
**SERVICE ADVICE**

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
 WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

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GENERAL DISTRIBUTION	TAB	SUBJECT	
		ROUTINE MAINTENANCE	
		CATEGORY	NO.
		Service Instruction #11	23

ROUTINE MAINTENANCE CHECK LIST

To insure proper operation and reduce service calls, routine maintenance should be performed every six (6) months.

The attached check list is a guide for the service man. A copy of the check list should be filled out and filed with each Terminet 300 Printer job folder. A second copy should be forwarded to the General Electric Company, Data Communication Products Department, Waynesboro, Virginia, 22980. Extra copies are available from the above address.

PREPARED BY J. L. Currie	ISSUED BY R. A. Prudhomme	DATE 5/11/71	SUPERSEDES ISSUE DATED	PAGE 1 of 1
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ROUTINE MAINTENANCE CHECK LIST  
(Required 6 Month Intervals)

PRINTER SERIAL NUMBER \_\_\_\_\_

ITEMS

INITIAL IF COMPLETE

I. PRIOR TO STARTING

1. Check operator to see what, if any problems have occurred and correct problem.

\_\_\_\_\_

II. CLEANING

1. Clean top and bottom cover with cloth dampened in alcohol.
2. Remove and clean platen with cloth dampened in alcohol.
3. Remove and clean pressure rollers.
4. Clean dirt and dust from paper well area of printer.
5. Clean dust and dirt from photocell area.
6. Clean dust and dirt accumulation between print belt and belt guides.
7. Clean print fingers.

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III. LUBRICATION

1. See Service Manual, page 5-3 for lubrication table.
  - a. Rear Idler Pulley
  - b. Left Jackshaft Bearing
  - c. Line Feed Clutch
  - d. Platen Drive Gears
  - e. Platen Bearings
  - f. Friction Rollers
  - g. Platen Knob Shaft Bearing
  - h. Ribbon Reversing Mechanism
  - i. Ribbon Lift Arm Shaft Bearing

\_\_\_\_\_

ITEMS

INITIAL IF COMPLETE

IV. HARDWARE

- 1. All hardware should be secure, especially the following:
  - a. Frame Mounting
  - b. Motor
  - c. Ribbon Mechanisms
  - d. Paper Shield Switch
  - e. Interlock Switch
  - f. Rebound Bar
  - g. Belt Guides
  - h. Photocell Board

\_\_\_\_\_

V. ADJUSTMENTS

- 1. Drive belt tension - with 4 ounces of pressure applied mid-way between the pulleys:
  - a. Right belt deflects .100-.125 inches
  - b. Left belt deflects .100-.125 inches
- 2. Belt guide clearance .003 - .008 at tightest interface between belt and rear guide.
- 3. Clutch to solenoid arm clearance .005 at all lobes.
- 4. .010 max gap between ribbon lift arm and ribbon guide arm.
- 5. Depress ribbon lift solenoid plunger - the ribbon should be 1/32 - 1/16 above top of fingers.
- 6. The ribbon should be half way between the platen and the fingers.
- 7. Ribbon reverse shaft end play .010 - .015.
- 8. Ribbon lift shaft end play .010 - .015.
- 9. Jackshaft end play .003 - .007.
- 10. Rebound bar should be adjusted for .012 clearance between the finger and the face of the rebound bar.
- 11. Check photocell timing.

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ITEMS

INITIAL IF COMPLETE

VI. INSPECTION

- 1. Wires should not touch moving parts. Check that motor leads are not touching the jackshaft. \_\_\_\_\_
- 2. Capacitor and TXP covers are secure. The 2100 mf capacitor should not be touching the line feed relay. \_\_\_\_\_
- 3. No loose pulleys. \_\_\_\_\_
- 4. No loose hardware or other loose material in unit. \_\_\_\_\_
- 5. Platen operation is free. \_\_\_\_\_
- 6. Paper should not clip with Paper Pressure Release lever in the pressure position. \_\_\_\_\_
- 7. Does paper-out lever arm lock and unlock properly. \_\_\_\_\_
- 8. Paper holder should be adjusted so:
  - a. Paper rotates freely in the holders \_\_\_\_\_
  - b. Paper tracks without moving to either side of the platen. \_\_\_\_\_
- 9. Print belt rotates freely when moved by hand. \_\_\_\_\_
- 10. Check for broken or bent print fingers. \_\_\_\_\_

VII. OPERATIONAL CHECKS

- 1. Complete checkout procedure - Service Manual Page 2-2. \_\_\_\_\_

VIII. DESK

- 1. Clean desk with cloth dampened in alcohol. \_\_\_\_\_
- 2. Check ON-OFF switch. \_\_\_\_\_
- 3. Reader Serial Number \_\_\_\_\_.
- 4. Clean reader head with cloth dampened in alcohol. \_\_\_\_\_
- 5. Clean reader lamp. \_\_\_\_\_
- 6. Clean inside of drawer. \_\_\_\_\_
- 7. Check light focus and alignment. \_\_\_\_\_

ITEMS

INITIAL IF COMPLETE

- 8. Operate in forward and reverse direction. \_\_\_\_\_
- 9. Run tape with stop code. \_\_\_\_\_
- 10. Check rewind from ESC 0. \_\_\_\_\_
- 11. Operate all pushbuttons for correct response. \_\_\_\_\_
- 12. Punch Serial Number \_\_\_\_\_.
- 13. Clean chad from inside of drawer. \_\_\_\_\_
- 14. Check backspace pushbutton. \_\_\_\_\_
- 15. Does punch space correctly? \_\_\_\_\_
- 16. Check all bits and sprocket holes for correct punching. \_\_\_\_\_

IX. FINISH

- 1. Outward appearance of terminal looks neat and clean.
- 2. Does the customer need ribbon, paper etc.,?

ROUTINE MAINTENANCE PERFORMED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

RETURN TO: General Electric Co.  
 Data Communication Products Dept.  
 Product Service  
 G.E. Drive  
 Waynesboro, Virginia 22980

JLC:emr  
5/3/71

Mark General Electric Company, U.S.A.

GENERAL DISTRIBUTION

TAB

SUBJECT

READER CUTTING OFF

CATEGORY

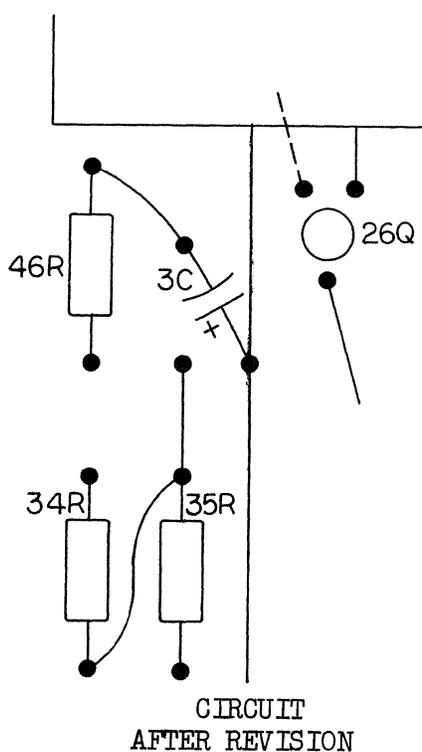
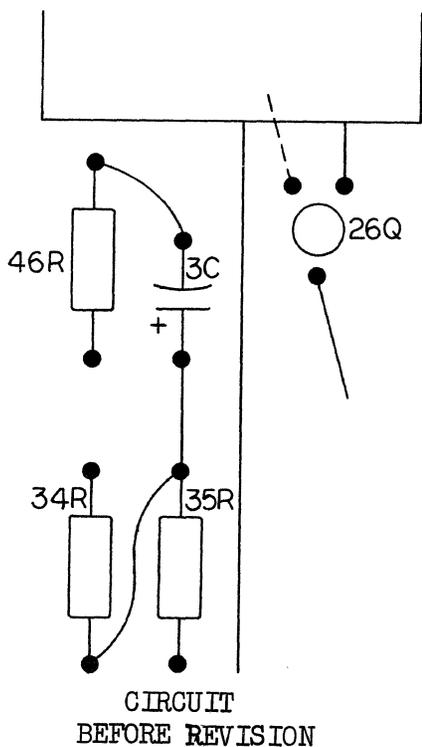
General Service - Newsletter #4

NO.

24

A modification to the Reader Board (RDRB) 44B412360-G01 used in "B" Model Terminet 300 ASR units can easily be made to improve the reliability of the reader. Without this modification, it is possible for the reader to occasionally stop reading and shut off for no apparent reason. The modification consists of performing the following steps:

1. Turn off power and remove the RDRB from the reader drawer.
2. Locate capacitor 3C (2.2 uf).
3. Remove the capacitor lead from the P.C. board which connects to resistor 35R and 34R.
4. Reconnect this capacitor lead to the collector of 26Q and 31Q.
5. Re-install modified board, and turn power on.
6. Adjust potentiometer 1P on RDRB board for a 2.3 to 2.4V reading across resistor 18R.



PREPARED BY

E.L. Hammers

ISSUED BY

R.A. Prudhomme

DATE

6/24/71

SUPERSEDES  
 ISSUE DATED

PAGE

1 of 1

**TermiNet 3000** DATA COMMUNICATION PRINTER  
**SERVICE ADVICE**

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
 WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

Mark General Electric Company, U.S.A.

GENERAL DISTRIBUTION

TAB

SUBJECT

RIBBON LIFT SPRING (44A410125-001)

CATEGORY

General Service - Newsletter #5

NO.

25

A batch of defective ribbon lift springs have gotten into the manufacturing cycle. They are prone to breaking at one end because of tool mark indentation.

1. Check your inventory of these springs. If the ends are not smoothly rounded, return them to Waynesboro for replacement at no charge.
2. Since any machine manufactured between June, 1970 and March, 1971 could conceivably have had one of these springs installed, the spring on these machines should be replaced at the earliest time service is required. Those machines which are most **under suspicion** are those having the first three digits of the Serial Number as follows:

023----- to 052-----

or

101----- to 109-----

To avoid possible duplication of effort, we suggest that each Service Shop devise a scheme whereby when a spring is replaced an identifying mark, such as a small red paint dot, will be placed on the right side frame in the area of the ribbon lift spring.

PREPARED BY

M.R. Redmond

ISSUED BY

R.A. Prudhomme

DATE

6/14/71

SUPERSEDES  
 ISSUE DATED

PAGE

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# Terminet 300 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

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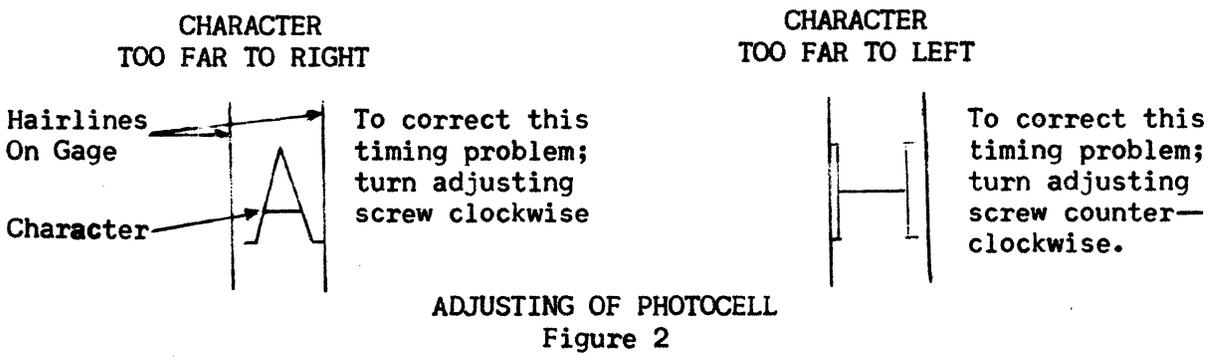
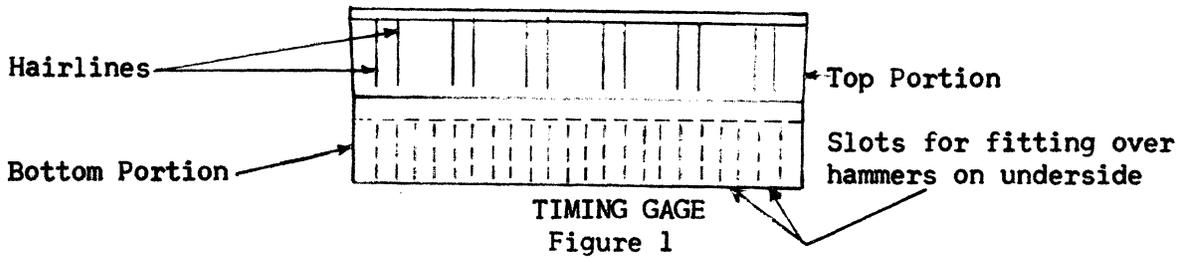
GENERAL DISTRIBUTION	TAB	SUBJECT	
		TIMING GAGE (44A410619-G01)	
	CATEGORY		NO.
	General Service - Newsletter #6		26A

Timing gages are now available through the normal ordering procedure at a cost of 75 cents each. The purpose of the gage is to make timing of the Terminet 300 Printer easier, faster and more accurate.

The timing gage (see figure 1) is constructed of a rigid, transparent plastic material.

Instructions for using the gage are as follows:

1. Print out at least twenty-three random characters on the paper.
2. Place the timing gage over the hammers on the left end of the hammer bank by positioning the slots on the underside of the gage over the hammers. The top part of the gage should lay against the printed characters on the paper.
3. Check the centering of those characters appearing between the hairlines on the gage. If these characters are consistently to the right or left of the distance between the hairlines, the timing should be adjusted. To make the adjustment, loosen the vertical mounting screw on the photocell block and turn the horizontal photocell adjusting screw (refer to GEH-2185, pages 5-21). If the characters between the hairlines are too far to the left, turn the adjusting screw counter-clockwise. If the characters are too far to the right, turn the adjusting screw clockwise. When the timing has been correctly set, tighten the vertical mounting screw securing the photocell block. (See figure 2)



PREPARED BY	ISSUED BY	DATE	SUPERSEDES ISSUE DATED	PAGE
M.R. Redmond	R.A. Prudhomme	7/13/71		1 of 1

# Terminet 3000 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

\*Trademark General Electric Company, U.S.A.

# GENERAL ELECTRIC

DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8000

TO:  GENERAL DISTRIBUTION	TAB	SUBJECT  PAPER HOLDER (44B412477-G01/G04)
		CATEGORY  General Service - Newsletter #7

A quantity of the new paper holders with anti-sag attachments will soon be made available at no cost to all Terminet service locations. The new paper holders should be installed on as many machines as possible during routine service calls. The new paper holders may be installed on machines using either friction or pin feed platens. Should additional paper holders be required, the correct size should be specified by using the following group numbers when ordering.

- G01 - 75 Column Printer
- G02 - 118 Column Printer
- G03 - 80 Column Printer
- G04 - 50 Column Printer

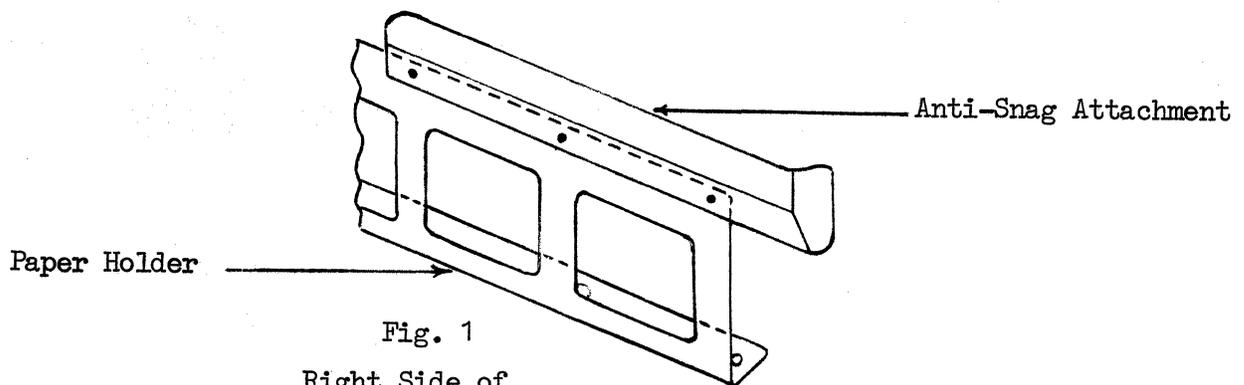
The purpose of the new paper holder (see Figure below) is to prevent moving print fingers from snagging paper should it loop away from or not be snug against the platen.

The procedure for replacing the old style paper holder with the new one takes approximately ten minutes and is as follows:

1. With power off of the machine, raise the top cover.
2. Remove the platen and paper pan.
3. Remove the smaller rollers (if friction feed) toward front of machine.
4. Remove the old paper holder as follows:

### CAUTION

Use care when removing screws from old paper holder so as not to drop them into the machine. A magnetic screwdriver may help.



PREPARED BY M.R. Redmond	ISSUED BY R.A. Prudhomme	DATE 12/15/71	SUPERSEDES ISSUE DATED 7/13/71	PAGE 1 of 2
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DATA COMMUNICATION PRODUCTS DEPARTMENT  
 WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

TO GENERAL DISTRIBUTION	TAB	SUBJECT PAPER HOLDER (44B412477-G01/G04)	
		CATEGORY General Service - Newsletter #7	NO. 27B

- a. Remove the three mounting screws securing the paper holder to the rear belt guide. Save these screws for installing the new paper holder. DO NOT ACCIDENTALLY REMOVE THE TWO LARGER SCREWS HOLDING THE REAR BELT GUIDE.
- b. Remove the paper holder by tilting it toward the rear of the machine so that the lip on the holder can slide past the pressure roller yokes.
5. Install the new paper holder with the anti-sag attachment facing the right side of the machine. Reverse the procedure in 4b for placing the new holder in the machine. Replace the three screws securing the paper holder to the rear belt guide.
6. Re-install the front rollers, platen, paper pan, and check operation of the machine.
7. When installing paper holders on machines with pin feed platens, care should be taken to assure that the grounding plates and paper release stops on the platen assemblies are reoriented properly when re-installing the platen assembly.

PREPARED BY M.R. Redmond	ISSUED BY R.A. Prudhomme	DATE 12/15/71	SUPERSEDES ISSUE DATED 7/13/71	PAGE 2 of 2
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# TermiNet 3000 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

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GENERAL DISTRIBUTION

TAB

SUBJECT

CHECKING PULLEY TO GUIDE ALIGNMENT

CATEGORY

General Service - Newsletter #8

NO.

28

A new alignment gage (44A410583-001) is now available through the normal ordering procedure at a cost of approximately \$35.00 (see figure 1). The gage which is accurate to  $\pm .001$ " will assure good vertical alignment of the print belt pulleys with respect to the front belt guide. The result of this alignment being incorrect on some units has caused belt sticking problems.

To use the gage, do the following:

1. Remove the print belt (refer to GEH-2185, pages 5-20).
2. Insert the tongue on the gage into the groove on one end of the front belt guide.
3. Holding the gage firmly against the front belt guide, check to see if the tongue on the gage will go into the groove on the pulley. If not, raise or lower the pulley as necessary for correct alignment by adding or removing pulley shims (see figure 2).
4. When the correct vertical alignment on one pulley has been verified, check, and align as necessary, the other pulley by repeating step 3.
5. Replace the print belt. Make sure the .003" - .008" clearance is maintained between the print belt and the rear belt guide.
6. Check for drag by rotating the print belt by hand.

Tongue on Gage fits into grooves on Print Belt Pulleys and Front Belt Guide

Figure 1  
Alignment Gage

PULLEY TOO HIGH - REMOVE SHIMS TO CORRECT PROBLEM

PULLEY TOO LOW - ADD SHIMS TO CORRECT PROBLEM

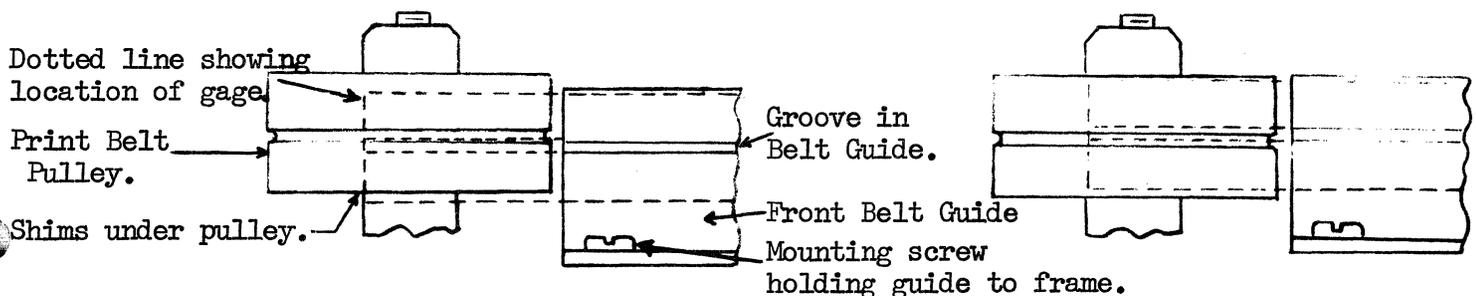


Figure 2 - Pulley Alignment

PREPARED BY

M.R. Redmond

ISSUED BY

R.A. Prudhomme

DATE

6/18/71

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# Terminet 300 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

**GENERAL ELECTRIC**

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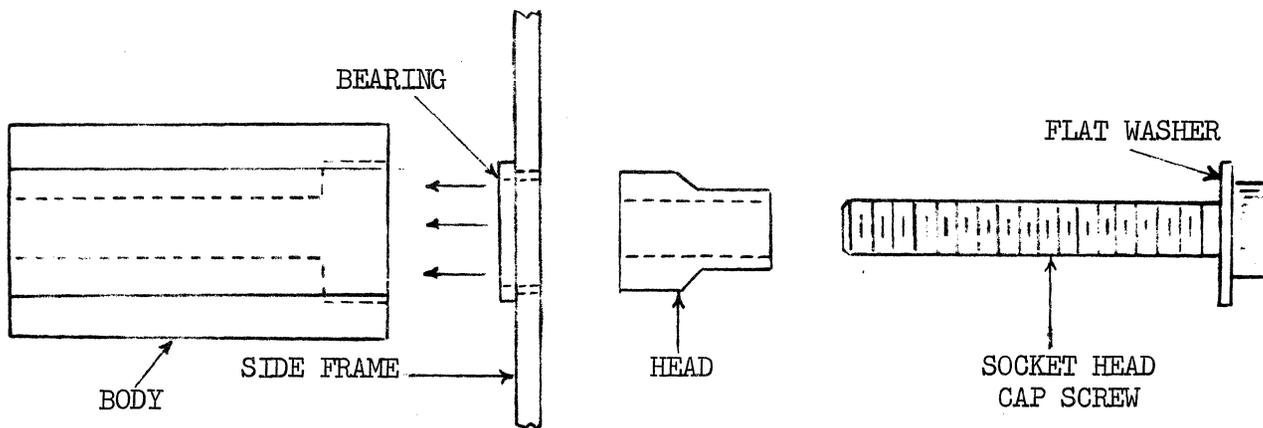
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GENERAL DISTRIBUTION	TAB	SUBJECT	
		BEARING PULLER (44A410588-G01)	
		CATEGORY	NO.
		General Service - Newsletter #9	29

A custom designed bearing puller for removing jackshaft bearings from the Terminet 300 Printer, is now available through the normal ordering procedure at an approximate cost of \$12.00 each. It is recommended that each service location have at least one of these tools.

The bearing puller, which consists of three pieces, - body, head, and cap screw, is operated as follows (see figure 1):

1. Place the body of the bearing puller with the larger inside diameter against the large end of the bearing.
2. Place the head of the bearing puller against the other end of the bearing. When removing the smaller size bearings, use the smaller end of the head to press against the bearing.
3. Push the socket head cap screw through the head, bearing, and into the body of the bearing puller. The body is threaded inside so that the cap screw can be tightened applying force against the bearing. Align tool so that the head is pushing against only the bearing.
4. While using an allen wrench to hold the cap screw, apply force to the bearing by turning the body of the bearing puller using a suitable open end wrench. Continue applying force against the bearing until it is free.



BEARING PULLER  
Figure 1

PREPARED BY	ISSUED BY	DATE	SUPERSEDES ISSUE DATED	PAGE
M.R. Redmond	R.A. Prudhomme	6/17/71		1 of 1

# Terminet 300 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

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GENERAL DISTRIBUTION

TAB

SUBJECT

NEW STYLE PAPER HOLDER

CATEGORY

General Service - Newsletter #10

NO.  
30A

**NOTE**

Adjustment of the clutch (44A410608-G01) in the new paper tube assembly as outlined in Service Advice #30 has been found to be far too critical to be attempted in the field without special fixturing for setting the correct amount of torque. The following service instructions shall apply to the new paper holder.

A new style paper holder consisting of aluminum tube (44A410482-G01), two brackets (44A410483-001), and adjusting stud (44A410484-001) has been introduced on all Terminet 300 Printers manufactured since fiscal week thirty. (The first four numbers in the Printer's serial number define the year and fiscal week of manufacture).

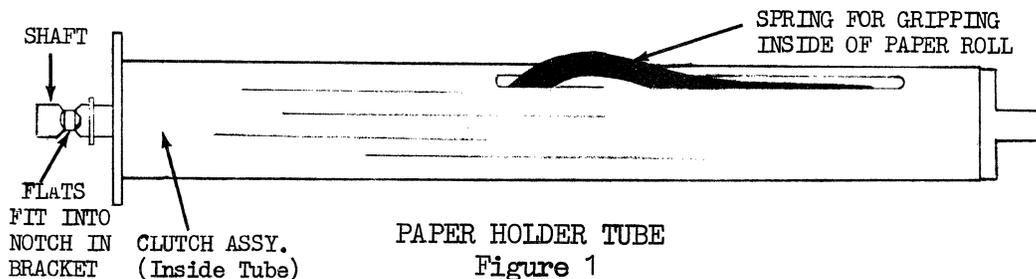
The new paper holder may be installed on any Model "B" Printer in situations where paper skewing, improper paper tracking or feeding is being experienced. To make the conversion, the two new brackets and adjusting stud are required in addition to the paper tube.

Features of the new paper holder include a positive gripping action on the paper roll plus a constant drag on the paper caused by the clutching action in the paper tube.

Any paper holder found defective due to improper clutching action should be immediately replaced and the defective paper tube returned to Waynesboro so the clutch can be properly readjusted.

The new paper holder is installed as follows:

1. Remove the existing paper tube, brackets, and adjusting stud.
2. Install the new brackets and adjusting stud. With the right bracket in place and secure, adjust the left bracket so that the distance between the back edge of the bracket and back edge of the base plate is the same as that on the right side.
3. When installing the new paper tube and paper in the Printer, the flats on the paper tube shaft must be correctly seated in the notched out portion of the paper holder bracket.
4. With new paper tube in place, adjust the stud on the left bracket to obtain a clearance of 0.677" between the inside edge of metal flange on paper tube and inside surface of left side frame.



PREPARED BY

M.R. Redmond

ISSUED BY

R.A. Prudhomme

DATE

9/24/71

SUPERSEDES  
ISSUE DATED

8/6/71

PAGE

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# Terminet 300 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

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GENERAL DISTRIBUTION

**TAB**

**SUBJECT**

DIAGNOSING "NO PRINT" PROBLEMS  
WITH AN OSCILLOSCOPE

**CATEGORY**

Service Instruction

**NO.**  
31

The following procedure is a "Data Tracing" method of troubleshooting the Terminet 300 Printer using a Dual Trace Oscilloscope. This diagnostic approach has been found to pinpoint problem areas in the vast majority of Printers returned to Waynesboro for repair. Hopefully this procedure will assist many of the Service Shops in diagnosing problems which otherwise would have to be done in Waynesboro. This procedure should help eliminate excessive customer down time as well as unnecessary shipping charges. The procedure is simple, taking only about five minutes to perform.

The following write-up includes a flow diagram of the entire procedure showing all of the decision points. After the repairman has become familiar with this technique, it is probable that the only reference needed will be the flow diagram.

\*All of the scope checks outlined in this procedure must be made with power on and the print belt running. (It is not necessary for the print belt to be running while checking logic only. This can be done with the Printer in the STANDBY condition). When checking a "Receive Only" (RO) unit coupled to another device capable of generating ASCII code, all references throughout this procedure to "keying characters from the keyboard" should be disregarded.

**CAUTION**

BEFORE STARTING THIS PROCEDURE,  
FOLLOW ALL SAFETY PRECAUTIONS  
APPROPRIATE TO WORKING ON EQUIP-  
MENT UNDER POWER AND WITH MOVING  
PARTS.

\*See Caution Note on Page 4.

**PREPARED BY**

M. R. Redmond

**ISSUED BY**

R. A. Prudhomme

**DATE**

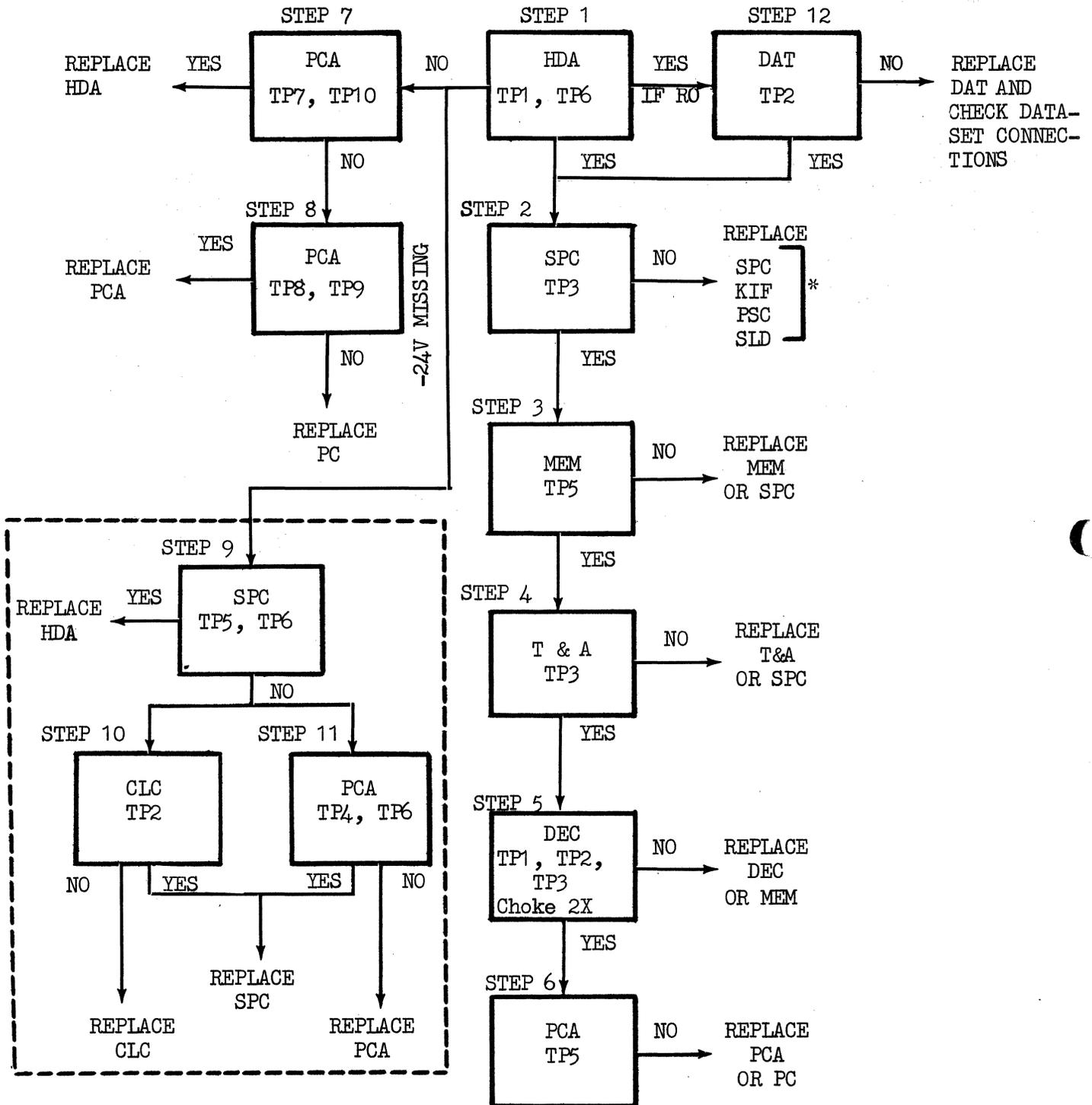
8/6/71

**SUPERSEDES  
ISSUE DATED**

**PAGE**

1 of 1

DIAGNOSING "NO PRINT" PROBLEMS  
WITH AN OSCILLOSCOPE  
DATA TRACING-FLOW DIAGRAM



\*Any one of these boards could be faulty. A "yes" or favorable response to Step 2 eliminates this block of boards as a possible cause of the trouble.

NOTE: Perform the portion enclosed in the dotted box only if -24V is missing from Step 1.

1. HDA - TP1, TP6

Place probe 1 of the scope on test point 1 (TP1) which is the Odd Hammer Drive (OHD). Place probe 2 on test point 6 (TP6) which is the Even Hammer Drive (EHD). If traces are observed as in Figure 1, problem is not on HDA: Proceed to step 2, or for "RO" units see step 12. If either one or both of the traces are missing or distorted, go to step 7. If -24V is missing from signal, go to step 9.

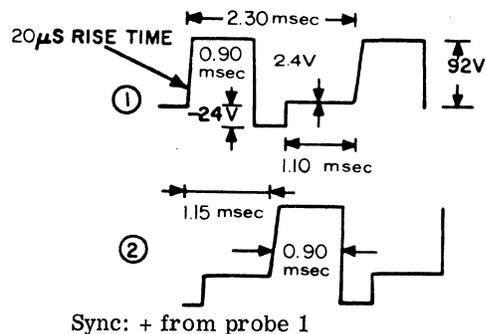


Figure 1  
HDA - TP1, TP6

2. SPC - TP3

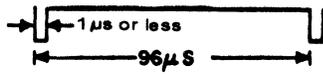
Place probe on test point 3 (TP3). Observe pattern while keying characters from the keyboard. The scope reference line should be at -15V with a different trace observed for each character keyed. This response will indicate problem is not the keyboard, PSC or KIF. If this check is okay, proceed to step 3.

3. MEM - TP5

Placing probe on TP5 of MEM will check character memory. Correct trace will show a reference line at 0V. When a character from the keyboard is keyed, each bit in the character (in serial form) should be observed on the scope below the reference line. (If MEM is at fault, other bits from subsequent characters keyed will be displayed on the scope. In some cases, the traces will crowd together and will remain on the scope until memory is full and cannot accept any more character bits.) If scope displays only those bits from each individual character keyed, proceed to step 4.

4. T&A - TP3

With scope probe on TP3, a series of 1µs -15V pulses should be observed. Each time a character is keyed, the pulses should widen to 12µs. (See Figure 2). This signal is generated on SPC. To look at fire even (FE) and fire odd (FO) signals individually, use TP1 and TP2 respectively. Scope reference should be at -3V and a 7µs blip can be observed each time the appropriate FE or FO signal is generated from the keyboard. (See Figure 3). If both channels of scope are used for checking TP1 and TP2, a blip can be observed on the scope for every fire signal generated. If correct traces are observed on T&A proceed to step 5.

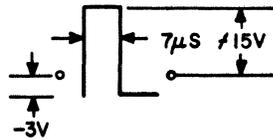


One of above pulses will widen to 12 μs with each print

Sync: -

Figure 2  
T&A - TP3

Every time even hammer is actuated



Sync: +

TP2 = Fire Odd Hammer (FOH)

Same waveform as TP1 when odd hammer is actuated

Sync: +

Figure 3  
T&A - TP1, TP2

5. DEC - TP1, TP2, TP3

Check each test point individually. The -15V reference on scope should pulse to 0V each time a character is keyed. If this happens, column memory is apparently working okay and DEC decoding properly. As an additional check to make sure output to HD is okay, put scope probe on lead of choke 2x on DEC. Use lead on choke nearest outer edge of board. +15V should be present at this point. If above checks are okay, proceed to step 6.

6. PCA - TP5

Place probe of scope on TP5 of PCA to check for presence of font signal used for monitoring. If the trace is observed as in Figure 4, this indicates PC and PCA are both okay.

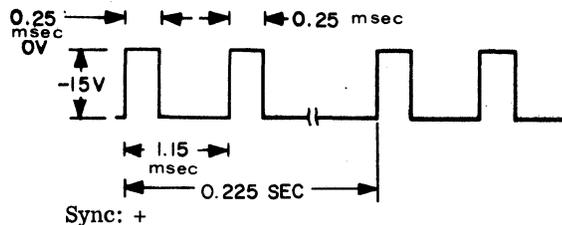


Figure 4  
PCA - TP5

7. PCA - TP7, TP10

CAUTION  
BEFORE PROCEEDING WITH THIS CHECK,  
MAKE SURE POWER IS REMOVED BEFORE  
CONNECTING SCOPE.

Place probe 1 of scope to TP7 and probe 2 to TP10. The trace as in Figure 5 should be observed. If so, proceed with step 8.

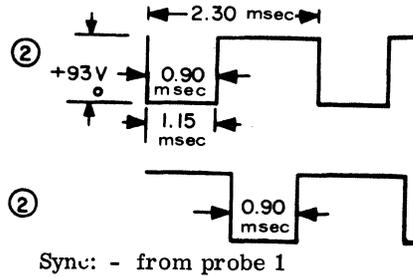


Figure 5  
PCA - TP7, TP10

8. PCA - TP8, TP9

Place probe 1 of scope to TP9 and probe 2 to TP8. Observe traces which should be as in Figure 6. If traces are correct, replace PCA. If not, replace PC.

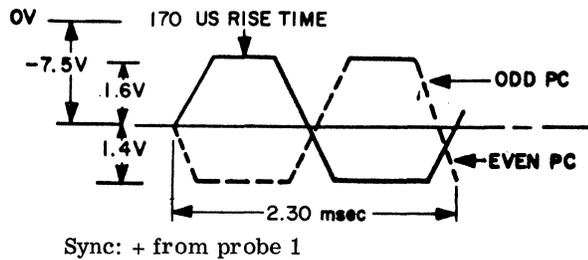


Figure 6  
PCA - TP8, TP9

9. SPC - TP5, TP6

Place probe 1 of scope to TP5 and probe 2 to TP6. Observe trace as in Figure 7. TP5 is the Compare Odd (CO) and TP6 is the Compare Even (CE) signal. If the correct traces are observed, the HDA board should be replaced. If the correct traces are not observed, go to step 10.

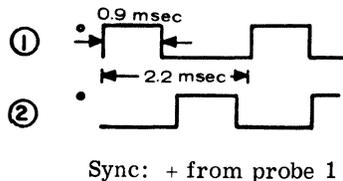


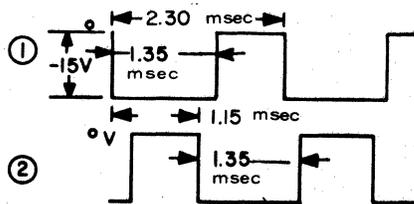
Figure 7  
SPC - TP5, TP6

10. CLC - TP2

With scope probe on TP2 of CLC, a  $12\mu\text{s}$  pulse should be observed every  $96\mu\text{s}$ . If this response isn't observed, CLC should be replaced. If the response is correct, proceed to step 11.

11. PCA - TP4, TP6

Place probe 1 on TP4 and probe 2 on TP6. Observe traces which should be as in Figure 8. If they are not, PCA should be replaced. If the correct response is observed on both TP4 and TP6 of PCA, and TP2 of CLC, SPC should be replaced.



Sync: - from probe 1

Figure 8  
PCA - TP4, TP6

12. DAT - TP2 ( IF RO UNIT)

Place probe of scope to TP2 on DAT. The scope trace should be like that observed on TP3 of SPC (see step 2). If not, DAT may be at fault. If this check is okay, proceed to step 3.

# Terminet 3000 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

General Electric Company, U.S.A.

TO: GENERAL DISTRIBUTION	TAB	SUBJECT REPAIR AND RETURN PROCEDURE (Supersedes Service Advices 7, 8, 9 and 21)	
		CATEGORY Reporting Procedure Warranty Instructions R&R and Exchange Plans	NO. 32

### INTRODUCTION

The purpose of this Service Advice is to instruct all Terminet Printer servicemen on the correct procedure to be followed in returning parts or complete units (either in or out of warranty) for repair or replacement.

The Schenectady Instrumentation Service should always be contacted first when parts are required, however, if a part is not in stock in Schenectady, or if warehouse quantities are required, Customer Service in Waynesboro should be contacted for assistance.

This instruction outlines "repair and return" policy for Waynesboro only. When parts are requested from Schenectady they will provide ordering information as required.

All Schenectady correspondence and packages should be directed to:

General Electric Company  
Schenectady Instrumentation Service  
Building 28-5  
1 River Road  
Schenectady, New York 12305

Telephone 518-374-2211, Ext. 5888  
Dial Comm. 8\*235-5888

All Waynesboro correspondence should be directed to:

General Electric Company  
Customer Service - Printer  
Data Communication Products Department  
Waynesboro, Virginia 22980

For Warranty Service Only, Call:

Telephone 703-942-8161, Ext. 138  
Dial Comm. 8\*272-1138

For ordering new or exchange parts out of warranty call:

Telephone 703-942-8161, Ext. 179 or 523  
Dial Comm. 8\*272-1179 or 1523

PREPARED BY

M.R. Redmond

ISSUED BY

R.A. Prudhomme

DATE

9/13/71

SUPERSEDES  
ISSUE DATED

PAGE

1 of 4

# TermiNet 3000 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

\*Trademark General Electric Company, U.S.A.

# GENERAL ELECTRIC

DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 ---TELEPHONE 703-942-8161

TO: GENERAL DISTRIBUTION	TAB	SUBJECT REPAIR AND RETURN PROCEDURE (Supersedes Service Advices 7, 8, 9 and 21)	NO. 32
		CATEGORY Reporting Procedure Warranty Instructions R&R and Exchange Plans	

All Waynesboro packages containing parts for repair or replacement should be shipped to:

General Electric Company  
Printer Repair and Return  
Data Communication Products Department  
Waynesboro, Virginia 22980

DCPD, Waynesboro, will pre-pay all shipping charges on warranty items (parts and complete units) from Waynesboro to customer's site. The customer will be responsible for all other shipping charges on shipments made per this instruction.

OUT OF WARRANTY - REPAIR AND RETURN

Exchange of a Printed Circuit Board Out of Warranty

1. The returned PCB must be identified with a tag marked "Exchange Plan - Out of Warranty."
2. Fill out a Service Report form and attach the bottom copy to the failed PCB. The top copy must be mailed to Waynesboro and a purchase order must accompany the returned PCB.
3. If advance shipment of the replacement PCB is required, the purchase order number must be furnished before shipment can be made.
4. The replacement board will then be shipped from exchange stock and billed at the exchange price. If the failed board is not received within 30 days (45 days for Service Shops who are warehousing parts) or found non-repairable on arrival, the customer will be billed the additional difference between the exchange price and the full price of a new PCB.

Ordering Out of Warranty Parts Other Than Printed Circuit Boards

1. Mail a purchase order to Waynesboro including a complete description and part number of the part required.
2. If immediate shipment of the part is required, the purchase order number along with the part description must be called in to Waynesboro before shipment can be made. The part will then be shipped from new parts stock and the customer will be billed at the renewal part price.

PREPARED BY M.R. Redmond	ISSUED BY R.A. Prudhomme	DATE 9/13/71	SUPERSEDES ISSUE DATED	PAGE 2 of 4
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# TermiNet 3000 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

\*The General Electric Company, U.S.A.

# GENERAL ELECTRIC

DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

GENERAL DISTRIBUTION

TAB

SUBJECT REPAIR AND RETURN PROCEDURE  
(Supersedes Service Advices 7, 8, 9 and 21)

CATEGORY Reporting Procedure  
Warranty Instructions  
R&R and Exchange Plans

NO.

32

### Out of Warranty Repair Work Which Requires the Return of a Complete Unit to the Factory

1. Contact Customer Service in Waynesboro to make arrangements for returning unit.
2. A purchase order stating what work is to be done must accompany the returned unit.
3. Upon request, Waynesboro will furnish a quote before proceeding with the work.

### IN WARRANTY - REPAIR AND RETURN

#### Obtaining Replacement Parts Under Warranty

1. Contact Customer Service in Waynesboro giving a complete description of the part needed. An authorizing number will be assigned by Waynesboro to return the failed part. This number must appear on the Service Report form.
2. Complete a Service Report form and attach the bottom copy to the failed part. The top copy must be mailed to Waynesboro.
3. Unless specifically requested, return only the following failed parts:
  - a. Complete Printers
  - b. Printed Circuit Boards
  - c. Complete Punches
  - d. Complete Reader Heads

Keep miscellaneous other parts for bulk shipments later if requested. Otherwise, return is not required.

4. When an exchange part is requested in advance, the failed part must be returned within 30 days (45 days for Service Shops warehousing parts) or the customer will be billed accordingly. The bottom copy of the Service Report form must be attached to the returned part.

#### Obtaining Repair Work On Complete Units Under Warranty

1. Contact Waynesboro to obtain an authorization to return unit.
2. Fill out a Service Report form and attach bottom copy to unit being returned. The top copy must be mailed to Waynesboro. Include the authorization number on the Service Report form.
3. Units received at the factory for warranty service will receive repair of defective items only. If other work is desired, the customer's purchase order stating what work is to be done must accompany the returned unit.

PREPARED BY

M.R. Redmond

ISSUED BY

R.A. Prudhomme

DATE

9/13/71

SUPERSEDES  
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<b>TO:</b> GENERAL DISTRIBUTION	<b>TAB</b>	<b>SUBJECT</b> REPAIR AND RETURN PROCEDURE (Supersedes Service Advices 7, 8, 9 and 21)	<b>NO.</b> 32
		<b>CATEGORY</b> Reporting Procedure Warranty Instructions R&R and Exchange Plans	

- Most units will be repaired within five days of receipt for regular warranty repairs.

SERVICE REPORT FORMS

Accurate and prompt reporting of field problems will supply Customer Service with valuable data which will insure continued reliability of all products manufactured in the Terminet line.

In addition, the Service Report accomplishes the following:

- Registers the warranty on initial installation.
- Assures "no charge" parts replacement or repair while equipment is under warranty.
- Makes available factory furnished modification part installations.

The following items are especially important and must be reported correctly.

- Model number and serial number - of the equipment being serviced.
- Description of Failure - a clear description of each failure and if possible cause of the failure.
- Date Code - All printed circuit boards are stamped on the solder side with a four digit date code which identifies manufacturing date. The first two digits indicates the fiscal week and the last two the fiscal year.

When new or exchange parts under warranty are obtained from Schenectady, the Service Report form (two copies) may be sent to them, otherwise the top copy should always be sent to Waynesboro.

<b>PREPARED BY</b> M.R. Redmond	<b>ISSUED BY</b> R.A. Prudhomme	<b>DATE</b> 9/13/71	<b>SUPERSEDES ISSUE DATED</b>	<b>PAGE</b> 4 of 4
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# Terminet 3100 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

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GENERAL DISTRIBUTION	TAB	SUBJECT	DATC BOARD 44B417416-G01
		CATEGORY	Service Instruction
			NO. 33

The DATB PCB has been replaced by the newer, improved DATC version. The DATC boards are now in production and are being shipped in "B" model Printers as well as in standard "B" Printer parts kits. The G01 version of the DATC is compatible to the DATB, however, the straps have been renumbered (see illustration for location of straps) as follows:

DATB	DATC
1J	5J
2J	3J
3J	2J
4J	1J
5J	4J
6J	6J

The renumbered straps do the following:

**NOTE**

For definitions of CA, CB, and BA refer to Functional Specification CCD-1006A in your Red Service Manual Binder.

- 1J Installed, 2J Removed = Status monitor from CA. (Terminet Printer in standby or alarm will turn off "CA").
- 2J Installed - 1 J Removed = Line control from "CA".
- 3J Installed = Loss of "CA" puts transmit data at mark hold.
- 4J Installed = Auto motor On/Off with "CB" On/Off.
- 4J with 1J = "CA" controlled by "CB" when in standby.
- 5J Installed = Low Paper Alarm will: light alarm lamp, beep, transmit "Break" turn Reader and Motor off.
- 5J Removed = Light alarm lamp only.
- 6J Installed = motor will stop when "Control D" (EOT) is recognized.  
Removed = Motor will not stop

G02 Version

The G02 version of the DATC is normally used only with the 202 Modem PCB. The G02 DATC removes "CB" block from transmitted data (normally "CB" off clamps "BA" to mark hold). This allows the use of the 202 Modem PCB.

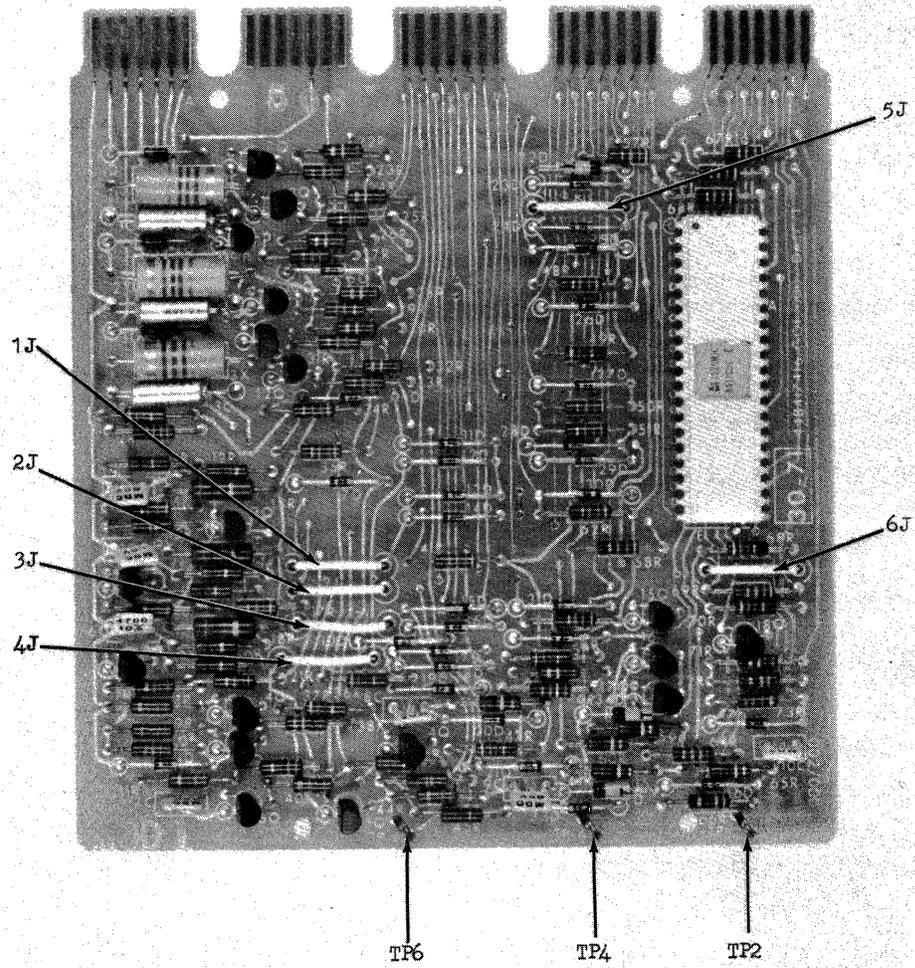
G03 Version

Normally status monitor "CA" will not turn off when the Printer goes to the "Standby" mode until signal "CB" turns off. With the G03 board, "CB" has no effect on "CA".

If Printer is in the Standby mode, "CA" will be clamped off resulting in status monitor "CA" being on only when Printer is in the On Line mode and no alarm condition exists.

PREPARED BY R.K. Wilson	ISSUED BY R.A. Prudhomme	DATE 9/29/71	SUPERSEDES ISSUE DATED	PAGE 1 of 2
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44B417416-G01



DATC

**TermiNet 300** DATA COMMUNICATION PRINTER  
**SERVICE ADVICE**

**GENERAL ELECTRIC**

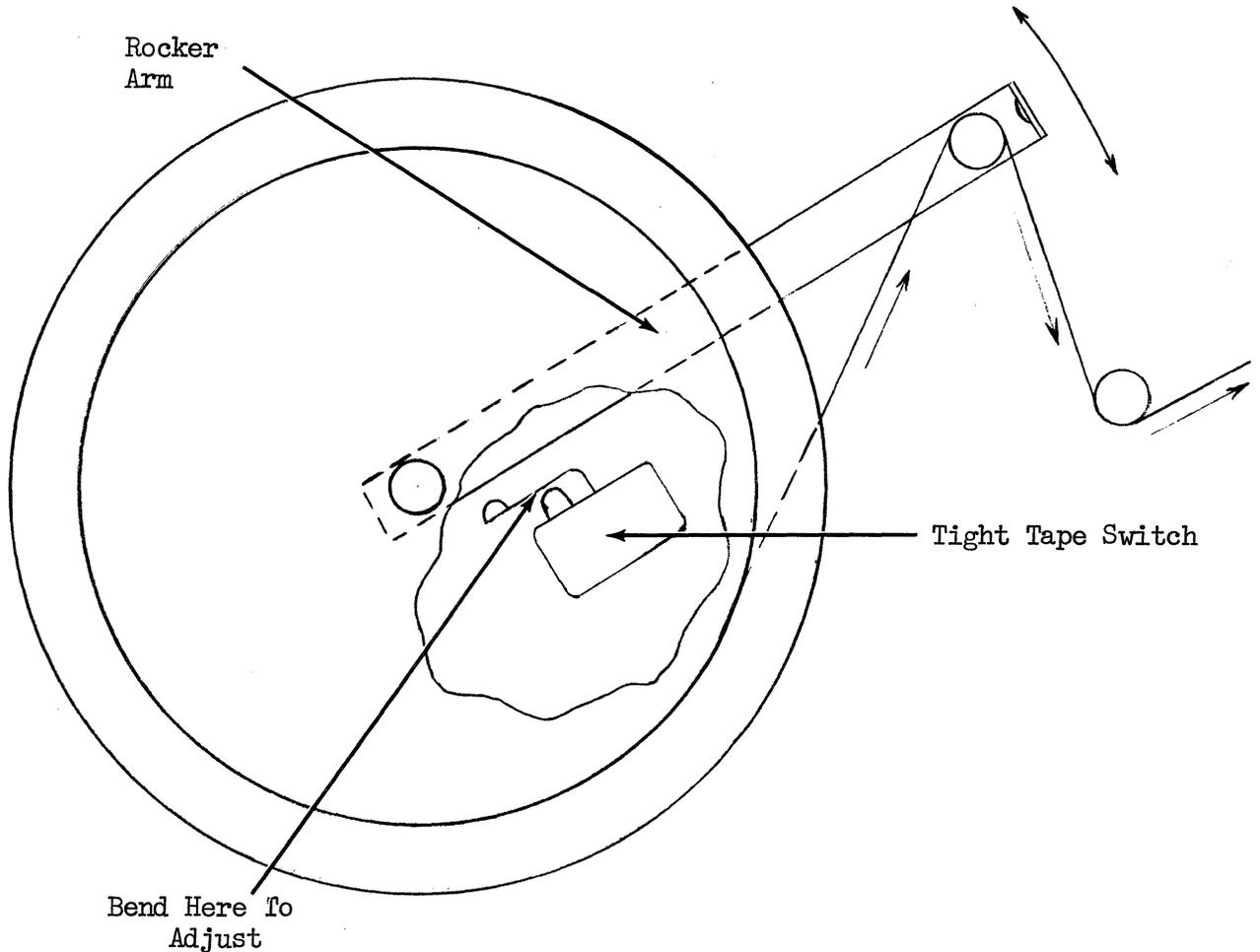
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TO:  GENERAL DISTRIBUTION	TAB	SUBJECT TAPE PUNCH DRAWER ASSEMBLY 440414122	NO. 34
		CATEGORY Service Instruction	

The Tape Punch Drawer Assembly in the TermiNet 300 Desk Console has been improved. Starting approximately fiscal week 45, some Punch Drawers manufactured in Waynesboro include a tight tape control which shuts the Punch off and causes an "alarm" condition whenever tension on the tape becomes excessive.

The correct adjustment on the tight tape switch is made at the factory and no further adjustment should be required. If, however, adjustment should become absolutely necessary, the switch arm can be bent up or down as required to obtain the desired setting. (See sketch below).



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# Terminet 300 DATA COMMUNICATION PRINTER

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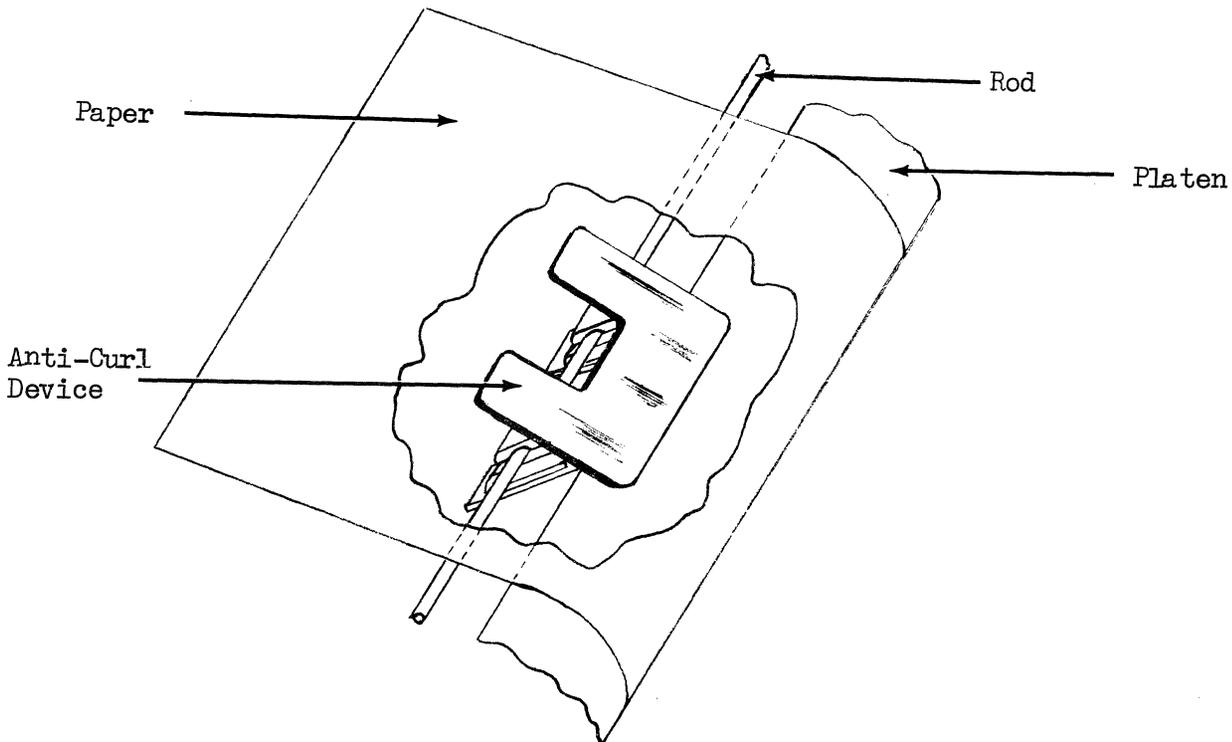
TO:  GENERAL DISTRIBUTION	TAB	SUBJECT ANTI-PAPER CURL DEVICE 44C414179-001	
		CATEGORY Service Newsletter	NO. 35

The new anti-paper curl device is now available for use on the Terminet 300 Printer.

This device is used to prevent paper in the Terminet 300 Printer from curling around behind the platen. The anti-curl device does not have to be removed when paper is changed in the Printer.

Installation of the anti-curl device is made by simply snapping the two tabs over the horizontal rod in front of the tension limiter ("dancer bar") on the Printer. The paper shield must be in the raised position before the installation can be made. The device may be placed in most any horizontal position on the rod as long as it is positioned under the paper.

Since anti-curl devices will soon be made available in quantity to all Terminet 300 Printer Service Locations, they should be installed on as many Printers as possible during routine service calls.



**PREPARED BY**

M.R. Redmond

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R.A. Prudhomme

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# Terminet 300 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

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GENERAL DISTRIBUTION

**TAB**

**SUBJECT**

TAPE HOLD DOWN ASSEMBLY  
44B412583-G01

**CATEGORY**

Service Instruction

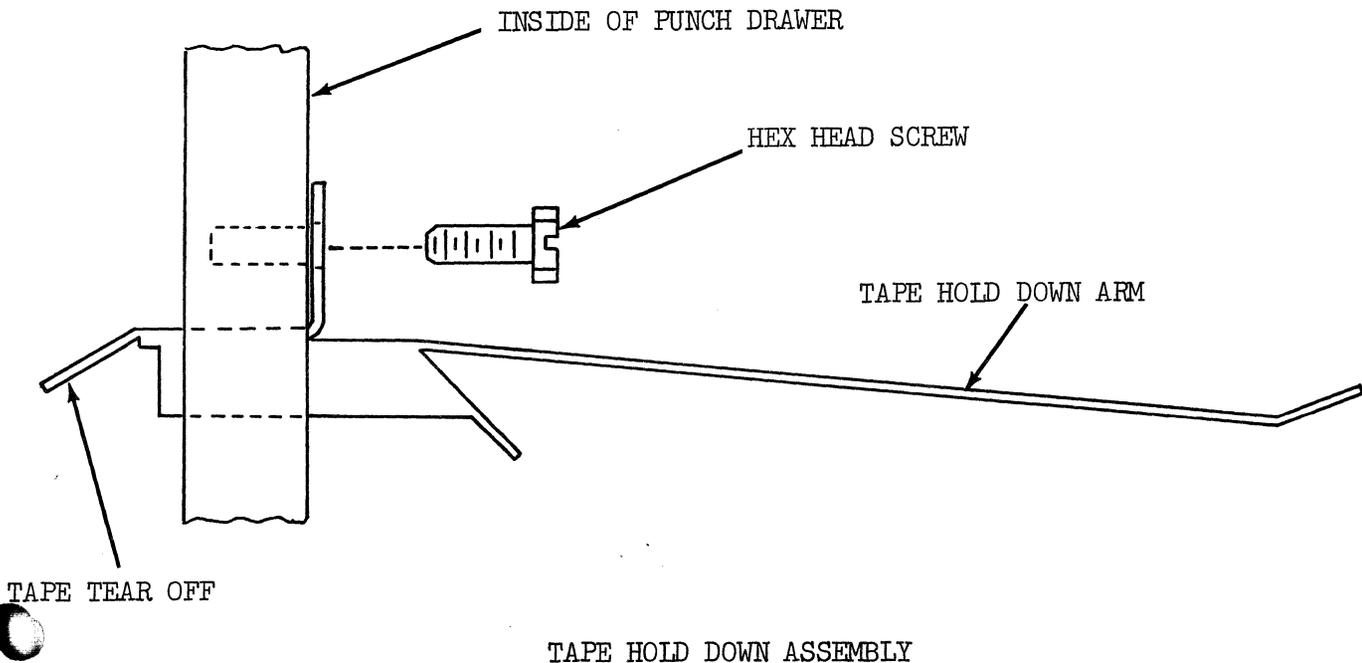
**NO.**

36

A new tape hold down assembly is being introduced for use on the Punch drawer in the Terminet Desk Console to relieve tape "bunching" problems. (See Figure Below). The new part is fabricated from plastic and comes as one solid piece. These parts will soon be made available in quantity to Terminet service locations, and should be installed on as many ASR units as possible during routine service calls.

Instructions for installation of the new tape hold down assembly are as follows:

1. Remove the two hex head screws which hold the old tape tear-off assembly in the Punch drawer. **CAUTION:** DO NOT DROP THESE SCREWS.
2. Remove the old tape tear-off assembly by pulling straight back towards the inside of the drawer.
3. Install the new assembly by reversing STEP 2. The pointed edge should be facing the front of the drawer. Replace the two hex head screws and tighten.



**PREPARED BY**

M.R. Redmond

**ISSUED BY**

R.A. Prudhomme

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**TermiNet 3100** DATA COMMUNICATION PRINTER  
**SERVICE ADVICE**

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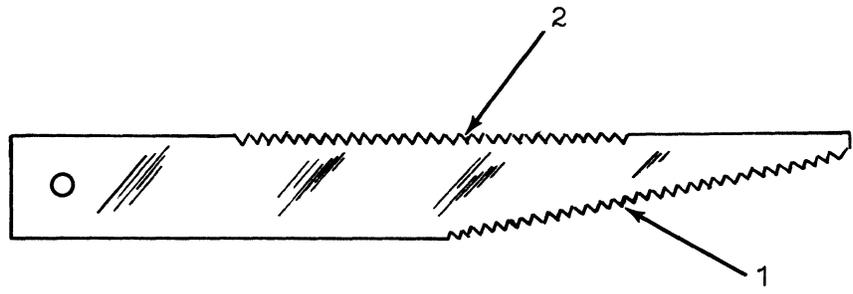
TO:  GENERAL DISTRIBUTION	TAB	SUBJECT CHAD CLEANER 44B412605-001	
		CATEGORY Service Instruction	NO. 37

The Data Communication Products Department will soon be making chad cleaner tools available at no cost to TermiNet service personnel. The tool is approximately .006" thick and has two scraping edges as shown in the figure below.

The chad cleaner is used to clean inside the Punch die to remove chad which has become lodged in the die.

To use the chad cleaner, slide it in the Punch die in the same manner paper tape would be inserted, and with a scrubbing motion, clean out the clogged chad. For normal jams, grasp the end of the tool containing the hole and use scraping edge 1 to scrub. For severe jams, grasp both ends of the tool, and with both hands, use scraping edge 2 to scrub in a back-and-forth motion.

Extra chad cleaners may be obtained by contacting Customer Service, DCPD, Waynesboro, Virginia 22980.



CHAD CLEANER

PREPARED BY M.R. Redmond	ISSUED BY R.A. Prudhomme	DATE 12/10/71	SUPERSEDES ISSUE DATED	PAGE 1 of 1
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# Terminet 3010 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

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WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

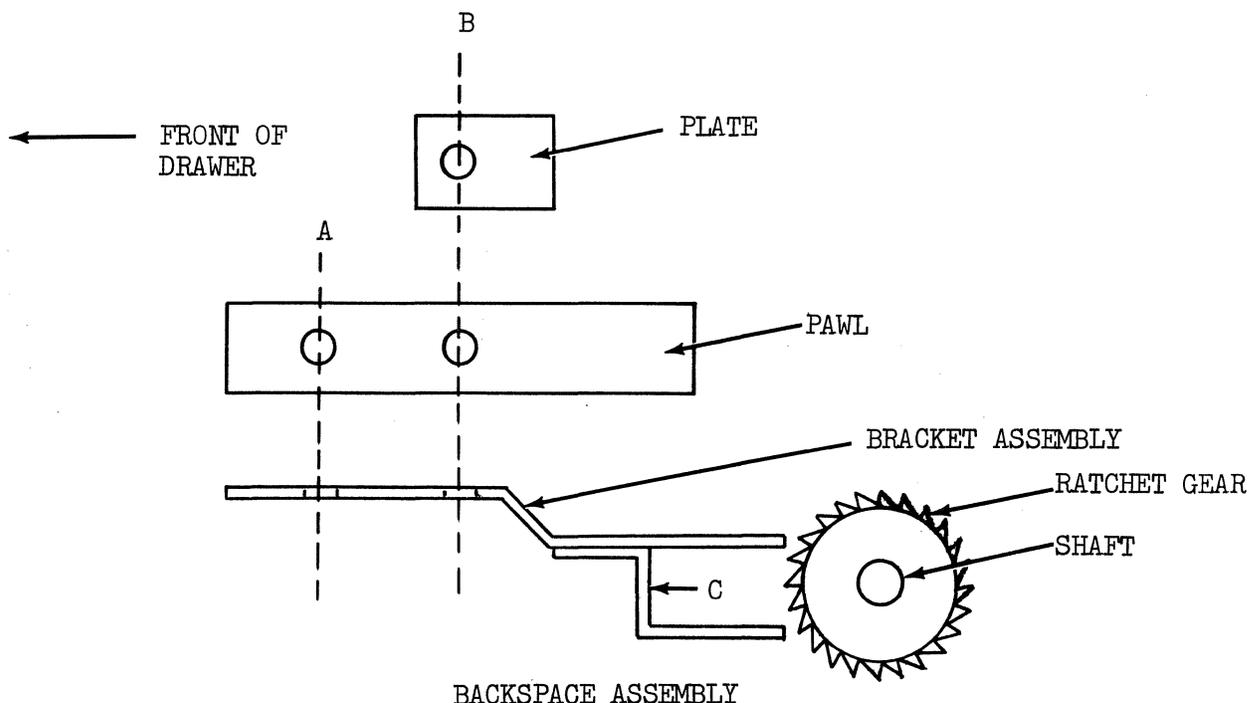
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GENERAL DISTRIBUTION	TAB	SUBJECT	BACKSPACE ASSEMBLY
	CATEGORY	Service Instruction	NO. 38

A new backspace assembly consisting of a bracket (44A410423-G01), fibre pawl (44A410444-001), and retainer plate (44A410397-001) will soon be made available at no cost to all Terminet service locations. The new assembly should be installed on as many Punch drawers in ASR units as possible during routine service calls.

Instructions for installing the new backspace assembly (see Figure below) are as follows:

1. Remove the two screws, lockwashers and flat washers which hold the old pawl and bracket assembly to the backspace pushbutton shaft. Remove the old pawl.
2. Next, remove the bracket assembly by lifting up on the end from which the screws were removed and then pulling it toward the front of the Punch drawer.
3. Install new bracket assembly by reversing STEP 2.
4. Place new pawl on top of bracket assembly, aligning the "A" and "B" holes of the pawl with the "A" and "B" holes of the bracket assembly.



**PREPARED BY**  
M.R. Redmond

**ISSUED BY**  
R.A. Prudhomme

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12/10/71

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# TermiNet 3000 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

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WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

TO:  GENERAL DISTRIBUTION	TAB	SUBJECT  BACKSPACE ASSEMBLY	NO.  38
		CATEGORY  Service Instruction	

5. Replace the screw, lockwasher, and flat washer which were removed from the "A" hole in STEP 1. Tighten until the pawl is snug but can still be shifted forward and backward. Move pawl all the way toward the front of the drawer.
6. Push in on the backspace pushbutton until the button is extended 1/32" from outside of drawer. Point "C" on the bracket assembly should now be pressing on the shaft on both sides of the ratchet gear. If it is not, move bracket assembly in until it does. Release pushbutton.
7. Without moving bracket assembly, move pawl toward ratchet until the back of the bracket assembly and back of pawl are flush. Tighten down on "A" screw.
8. Loosen allen screw on ratchet gear so gear can be moved slightly in either direction.
9. Push button in to within 1/32" of drawer. Check that point "C" on bracket assembly will still press on ratchet gear shaft. If not, repeat STEP 6.
10. While holding button flush, move ratchet gear by hand until the end of pawl will press in bottom point on one of the ratchet teeth. Hold in this position and tighten allen screw. Release pushbutton.
11. Rotate ratchet gear one complete revolution to make sure the end of the pawl is clear of all teeth on the gear. If not clear, loosen "A" screw and move pawl away from teeth only enough to clear. **CAUTION:** DO NOT MOVE POSITION OF BRACKET ASSEMBLY. Retighten "A" screw.
12. Push button in until bracket assembly bottoms. Pawl should move ratchet gear to correct position for one backspace. Take hold of ratchet gear shaft by hand and feel if ratchet is in correct position. If correct, install plate over "B" hole with larger surface area pointing toward ratchet gear. Replace "B" screw and lockwasher. Plate must be square with pawl. If ratchet is not in correct position for one backspace, loosen "A" screw and move pawl in proper direction to correct; then repeat STEPS 8, 9 and 10.

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GENERAL DISTRIBUTION	TAB	SUBJECT	
		ADJUSTING PROCEDURE FOR POWER REELERS	
		CATEGORY	NO.
		Service Instruction	39

The following procedure outlines the proper method for adjusting Power Reelers which are optional on the Reader/Punch Desk Console (ASR) units.

GENERAL

The Power Reelers operate when the Reader is reading or rewinding punched tape causing the tape to move one of the two dancer arms which are movable arms located at either end of the reader drawer. As either dancer arm moves, it causes a shaft inside the reader drawer to rotate. There are four (4) cams on each shaft fastened with Allen head set screws. The cams activate limit switches which cause various motor responses. The motors, in turn, drive the tape reels which supply and take-up punched tape as it is being read or rewound. The cams may occasionally go out of adjustment causing incorrect motor responses. When this happens, the cams may be reset by loosening the cam set screws, and rotating them on the shaft until they are in their correct positions. A numbered plate, inside the reader drawer, identifies each limit switch and associated cam.

ADJUSTMENTS

To assist in making correct cam settings, a supplement (39-2) is attached to this Service Advice which includes two templates for setting cams when the dancer arms are in various positions. One template is supplied for each dancer arm.

HINT

Place a strip of masking tape on the front of drawer below each reel. Tape must be long enough to include all four (4) switch positions as shown on the templates. Using the template as a guide, the switch positions can then be marked on the tape with a pencil after template is properly oriented with dancer bar limit and held firmly in place with one hand. This will prevent the templates from being damaged by taping them to the drawer.

Start adjusting procedure by removing power from the Power Reeler Unit by using the ASR power switch. Make sure each dancer arm is securely fastened in the shaft collar which is located on the front of the drawer near the top of each reel. The dancer arm should go all the way through the collar with the end of the arm being flush with outer surface of collar. Next, mark switch locations for left dancer arm after aligning outer limit on left dancer arm template with actual dancer arm outer limit. Then, moving the dancer arm in the position of the arrows shown on the template, observe limit switch action as the dancer arm is moved through each marked switch

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M.R. Redmond	R.A. Prudhomme	1/24/72		1 of 2

**TermiNet 3000** DATA COMMUNICATION PRINTER  
**SERVICE ADVICE**

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 WAYNESBORO, VA. 22980 ---TELEPHONE 703-942-8161

<b>TO:</b> GENERAL DISTRIBUTION	<b>TAB</b>	<b>SUBJECT</b> ADJUSTING PROCEDURE FOR POWER REELERS	
		<b>CATEGORY</b> Service Instruction	<b>NO.</b> 39

position. As the limit switch operates, a "clicking" noise can usually be heard. When one of the limit switches is observed to operate outside of its proper limits, the associated cam should be reset as follows:

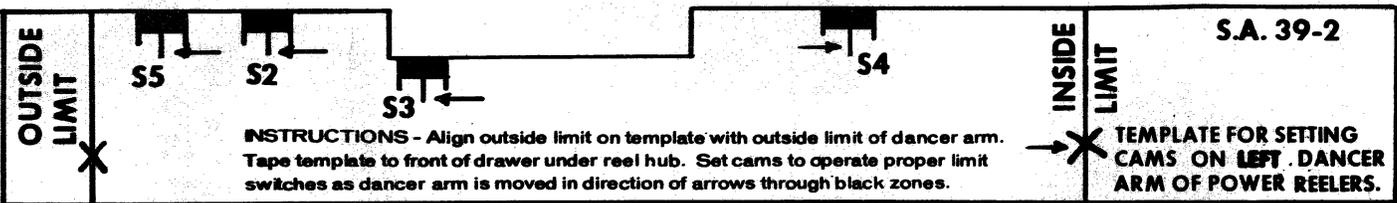
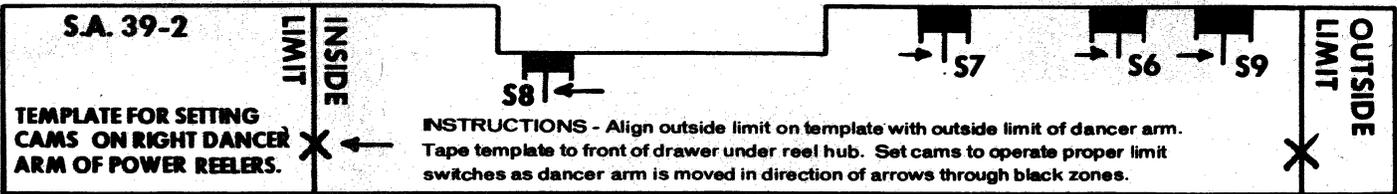
Loosen cam set screws and rotate the cam until the switch operates while the dancer arm is held stationary in the correct position. Retighten cam set screws. With all switches operating correctly as the left dancer arm is moved from one limit position to the other, repeat the same procedure for the right dancer arm using the right dancer arm template. After making any cam adjustments, make sure all set screws are tight.

CHECKING REELER OPERATION

The Power Reelers can be checked for proper operation by referring to "POWER REELER OPERATING INSTRUCTIONS" (GEK-35974).

<b>PREPARED BY</b> M.R. Redmond	<b>ISSUED BY</b> R.A. Prudhomme	<b>DATE</b> 1/24/72	<b>SUPERSEDES ISSUE DATED</b>	<b>PAGE</b> 2 of 2
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POWER REELER ADJUSTMENT TEMPLATES



CUT OUT TEMPLATES FOR USE WHEN ADJUSTING CAMS ON REELER DANCER ARMS.

# Terminet<sup>®</sup> DATA COMMUNICATION PRODUCTS

## SERVICE ADVICE

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IO: GENERAL DISTRIBUTION	TAB	SUBJECT POWER REELERS (44C414098-G04) TROUBLESHOOTING AND ADJUSTMENT FOR POWER REELERS	NO. 39A
		CATEGORY Service Newsletter	

### GENERAL

The optional Power Reelers when used with the Reader/Punch desk console (ASR) operate when the Reader moves the punched tape in either a forward or reverse direction. This movement causes the tape to move a pair of "dancer arms" which in turn operate two banks of micro switches. These switches control the movement of two motors which drive the Reelers in the correct direction to take up tape on one side and supply tape from the other. This operation is electrically independent of the Reader logic. A relay, which senses Reader direction controls the forward and reverse directions of the Reeler motors. If a dancer arm should inadvertently be pulled too far toward the Reader, the Reader will automatically be shut off.

### TROUBLESHOOTING

Prior to any disassembly of the Reader drawer, refer to the troubleshooting chart (Table 1) and perform the following checks.

1. Determine what the exact problem is.
2. Adjust both dancer arms so the lower portion of the arms are vertical as shown in the tape out position (Figure 1).
3. Move each dancer arm in slowly and release slowly and observe any friction that may cause the arms to bind. If there is any doubt, add a 3.7 oz. weight at the end of a thread looped over the roller and connected to the dancer arm. A 3.7 oz. weight should pull the arm in towards the center at least half way (Figure 1). With a 0.24 oz. weight in place of the other, the dancer arm should return to the tape out position. A spring gage may also be used as shown in Figure 1.
4. Using a feeler gage, check the dancer arm shaft end play. There should be a minimum of 0.002 in. between the front shaft bearing and the dancer arm hub. (Figure 1).
5. Add a 7 in. (17.8 cm) strip of masking or similar tape at the bottom of the Reader drawer under each dancer arm. Using the attached template (39A-2), mark each switch operating position on the tape. (Note the arrows showing the direction the arm has to be traveling when checked.) With power on and the Reader in the forward direction, check the motor and switch operation. (Note: The Reelers can be put into a forward direction by pressing the tape out switch and the Reader "Run" or "Character" push-buttons.
6. Reverse action can be checked by pressing the tape out switch and the Reader "Back Space" pushbutton.

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General Electric Company, U.S.A.

TO: GENERAL DISTRIBUTION	TAB	SUBJECT POWER REELERS (44C414098-G04) TROUBLESHOOTING AND ADJUSTMENT FOR POWER REELERS	NO. 39A
	CATEGORY	Service Newsletter	

TABLE 1  
 TROUBLESHOOTING CHART FOR POWER REELERS

PROBLEM	CAUSE
1. Reeler will operate even though desk power is cut off.	1. Normal condition.
2. Reeler operates correctly when Reader is in forward direction, but will not operate correctly when Reader is in reverse direction.	2. (a) Defective relay in Reeler system. (b) Defective RDRB board. (c) Wiring between RDRB board and Reeler system. (d) Open circuit to or in the motor windings. (e) Incorrect cam setting. (f) Defective switch.
3. Dancer Arms loose.	3. Loose set screw.
4. Dancer arm does not return to tape out position.	4. (a) Dancer arm rubbing desk front or Reelers. (b) Dancer arm return torque spring adjusted wrong or broken. (c) Binding in cam shaft bearings. (d) Bent cam shaft. (e) Loose hub holding torque spring.
5. Tape spills on floor (no take-up).	5. (a) Dancer arm not returning. (b) Incorrect cam setting (S3&S7). (c) Defective micro switch (S3&S7). (d) Tape threaded wrong.
6. Tape Tears. (A) with dancer arm pulled in -  (B) Infrequent times (dancer arms not pulled in) -	6. (a) Incorrect cam setting (S4-S8). (b) Defective micro sw. (S2-S6). (c) Defective K1 relay (if problem occurs only when in reverse). (d) Defective RDRB Bd. (if problem occurs only in reverse). (a) Intermittent micro switch. (b) Defective RDRB Bd. (c) Defective R&P Bd. (d) Dancer arm tension too high. (e) Defective punch.

PREPARED BY M.R. Redmond	ISSUED BY R.A. Prudhomme	DATE 1/16/73	SUPERSEDES ISSUE DATED 1/24/72	PAGE 2 of 8
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TO:  GENERAL DISTRIBUTION	TAB	SUBJECT POWER REELERS (44C414098-G04) TROUBLESHOOTING AND ADJUSTMENT FOR POWER REELERS	NO. 39A
		CATEGORY Service Newsletter	

PROBLEM	CAUSE
7. Reeler motor coasts to a stop instead of stopping immediately.	7. Dynamic braking circuit defective. Reeler PCB or S2, 3, 6 & 7.
8. Terminal goes to "Local" or "Standby" when Reeler arms are moved.	8.(a) Defective Reeler line filter. (b) Added filtering not installed.
9. Motors fail to operate.	9.(a) Check fuse. Should be 5A SLO BLOW. (b) Reeler power cord disconnected.
10. Reelers oscillate because tape moves after Reader stops.	10. Dancer arms are not set to the same tension (4 oz. to pull arms in to S3 or S7 position).

DANCER ARM ADJUSTMENT

1. Refer to Figure 1 and adjust both dancer arms as shown in the tape out position. The lower portion of each arm should be vertical.
2. Check dancer arm tension as outlined under "Troubleshooting", Step 3.
3. If the dancer arm will not return to its tape out position with a 0.24 oz. minimum force applied, the shaft may be binding internally in the bearings or there is no shaft end-play.
4. If lubrication is necessary, DO NOT USE OIL. A dry teflon spray lubricant may be used to lubricate the shaft, bearings and cams. If oil is allowed to get into the switches, they will malfunction.
5. After all excessive friction has been removed from the dancer arm assembly, the arm tension may be reset by loosening the collar nearest the cams. By rotating this collar on the shaft, the dancer arm tension is changed.

PREPARED BY M.R. Redmond	ISSUED BY R.A. Frudhomme	DATE 1/16/73	SUPERSEDES ISSUE DATED 1/24/72	PAGE 3 of 8
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# Terminet<sup>®</sup> DATA COMMUNICATION PRODUCTS

## SERVICE ADVICE

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DATA COMMUNICATION PRODUCTS DEPARTMENT  
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TO: GENERAL DISTRIBUTION	TAB	SUBJECT POWER REELERS (44C414098-GC4) TROUBLESHOOTING AND ADJUSTMENT FOR POWER REELERS	NO. 39A
		CATEGORY Service Newsletter	

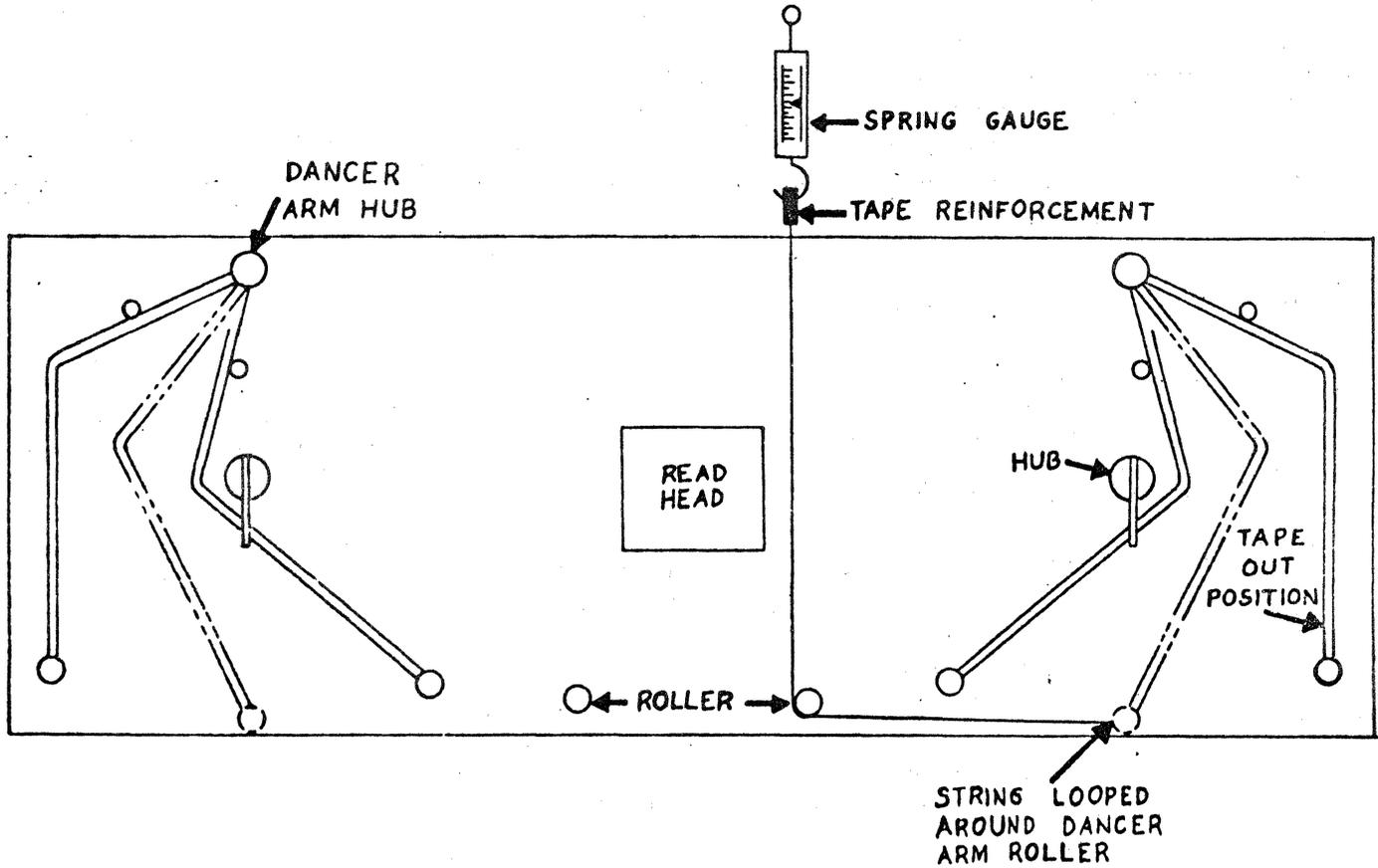


Figure 1. Spring Tension Test Arrangement

### CAM OPERATION

Before cam check out is started, refer to Figure 2 and note position of the cams. If they are not adjusted close to the position shown, reset the cams to the approximate position.

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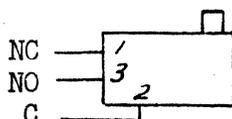
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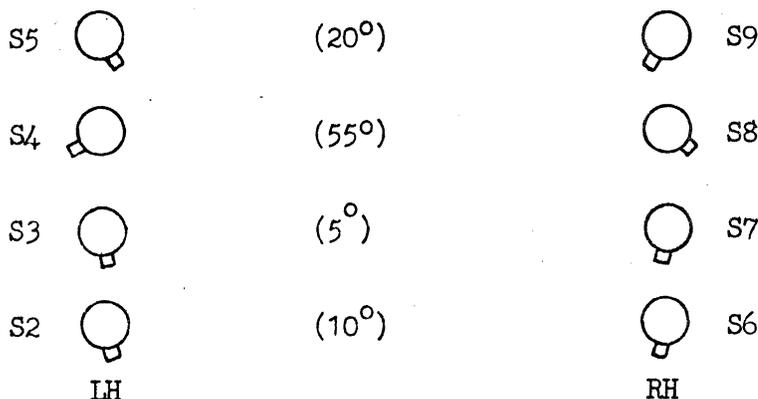
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	<b>CATEGORY</b>	Service Newsletter	



Typical S2-S9



(FRONT VIEW)

Figure 2

Approximate Cam Positions With Both Dancer Arms  
At (Tape Out) Positions

1. Install template (39A-2) or mark tape in the correct position on the Reeler front panel with "Stop Reference" mark directly under the dancer arm.
2. Install empty reels on both reel drive spinets; apply primary power to the Reeler unit.
3. Put Reader in the forward read mode (K1 de-energized) by pressing the Reader "Run" pushbutton or the "Character" pushbutton, with the tape out switch pressed.
4. Deflect the left hand dancer arm from its extreme left (tape out) position past position S5, then back towards the tape-out position. The right hand motor should rotate CW and then stop as the arm passes over the position marked "S5". When the left hand dancer arm roller is positioned over the position marked "S2" (moving left to right), both reel motors should rotate in a CW direction.
5. Press and hold the Reader tape-out switch and energize the Reader by pressing the "Character" pushbutton.

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<b>TO:</b> GENERAL DISTRIBUTION	<b>TAB</b>	<b>SUBJECT</b> POWER REELERS (44C414098-G04) TROUBLESHOOTING AND ADJUSTMENT FOR POWER REELERS	<b>NO.</b> 39A
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6. Move the left dancer arm to the right. The Reader should turn off as the arm passes the S4 position.
7. Slowly move the left dancer arm back to the left and observe that both motors rotate CW and that both motors are stopped at the template "S5" position.
8. Repeat Step 5.
9. Deflect the right dancer arm to its left most position. The right hand motor should have started running CW then stopped, and the Reader turned off at position "S8".
10. Slowly move the right dancer arm to the right and make sure that the motor begins CW rotation at the "S7" position.
11. Continue moving the right dancer arm and make sure that the right hand motor brakes to a stop at the "S9" position.
12. The Reader must be placed in reverse read mode (K1 energized). To accomplish this, press and hold the Reader "Back Space" pushbutton, with the tape out switch pressed.
13. Deflect the right dancer arm from its extreme right (tape out) position; the left hand motor should rotate CCW at position "S9". When the right dancer arm roller is positioned over the template position marked "S6", the right hand reel motor should also run rotating in a CCW direction. By moving the arm to the extreme left, the Reader should turn off at position "S8".
14. Slowly move the right dancer arm back to the right and observe that both motors rotate CCW and brake to a stop at position "S9".
15. Repeat step 12. Hold the tape out switch arm down.
16. Deflect the left dancer arm to its right-most position ("S4" position). The motor should have started running CCW, and the Reader turned off at the "S4" position.
17. Slowly move the left dancer arm to the left and make sure the motor starts CCW rotation at the "S3" position.
18. Continue moving the left dancer arm and make sure the left hand motor brakes to a stop at the "S5" position.

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**SUBJECT** POWER REELERS (44C414098-G04)  
TROUBLESHOOTING AND ADJUSTMENT FOR POWER REELERS

**CATEGORY** Service Newsletter

**NO.**  
39A

TABLE 2  
DANCER ARM ADJUSTMENT TABLE

SWITCH	SW POSITION	TOL	MODE	ARM & REEL	ARM MOTION	REEL RESPONSE	SWITCH CONTACTS	FUNCTION
S5	7/16"	±1/8	FWD	LEFT	R TO L	CW STOP	NC OPENS	LEFT BROKEN TAPE
S2	1 1/2"	±1/8	FWD	LEFT	L TO R	START CW	NC CLOSES	FORWARD SUPPLY CONTROL
S3	2 1/8"	±1/8	REV	LEFT	R TO L	START CCW	NO CLOSES	REVERSE TAKE-UP CONTROL
S4	4 5/8"	±1/8	REV	LEFT	L TO R	CCW STOP	NO CLOSES	LEFT TAUT TAPE
S9	7/16"	±1/8	REV	RIGHT	L TO R	CCW STOP	NC OPENS	RIGHT BROKEN TAPE
S6	1 1/2"	±1/8	REV	RIGHT	R TO L	START CCW	NC CLOSES	REVERSE SUPPLY CONTROL
S7	2 1/8"	±1/8	FWD	RIGHT	L TO R	START CW	NO CLOSES	FORWARD TAKE-UP CONTROL
S8	4 5/8"	±1/8	FWD	RIGHT	R TO L	CW STOP	NO CLOSES	RIGHT TAUT TAPE

### CAM ADJUSTMENT

1. Install the template (39A-2) in the correct position on the Reeler front panel with the "Tape Out" mark directly under the dancer arm rest position.
2. Remove power from the desk by removing the main power cord.
3. Refer to Figure 2 for switch contact information.
4. Remove the protective cover from the Reader drawer.
5. Move the left dancer arm to a position over "S2". With an ohmmeter, check the N.O. contacts. They should open as the dancer arm is moved from left to right past the "S2" template position. If the setting is not correct, move the cam that operates switch "S2" so the above can be accomplished.
6. Move the left dancer arm to the right. Switch "S4" N.C. contacts should open as the arm passes the "S4" template position.

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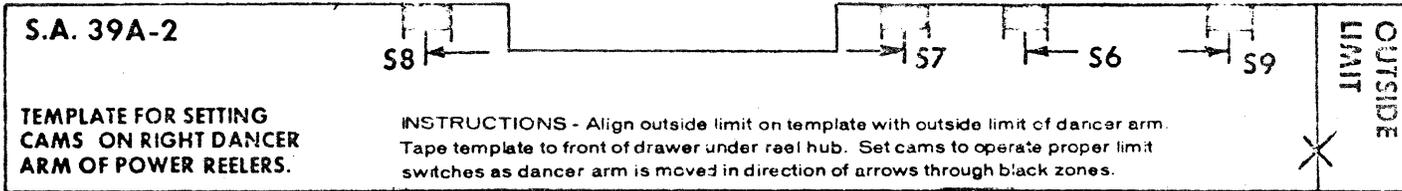
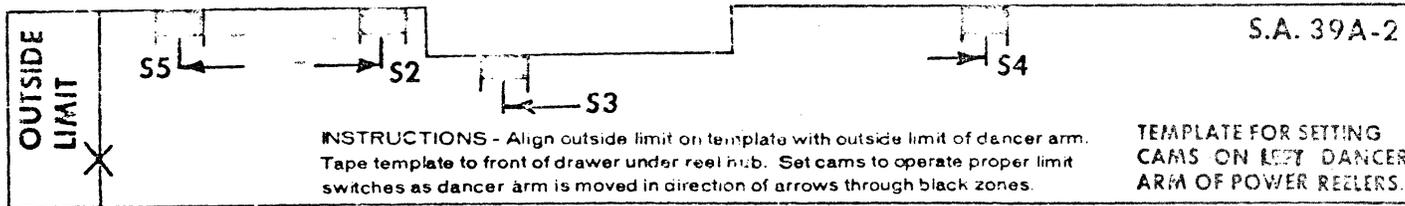
<b>TO:</b> GENERAL DISTRIBUTION	<b>TAB</b>	<b>SUBJECT</b> POWER REELERS (44C414098-G04) TROUBLESHOOTING AND ADJUSTMENT FOR POWER REELERS	<b>NO.</b> 39A
		<b>CATEGORY</b> Service Newsletter	

7. Move the left dancer arm to the left and set cam "S3" so that the N.O. switch contacts close at the "S3" template position.
8. Move the left dancer arm further to the left and set the cam so "S5" N.C. contacts open.
9. Move the right dancer arm to the template position over "S6". With an ohmmeter, check the N.O. contacts. They should open as the dancer arm is moved from right to left past the "S6" template position. If the setting is not correct, move the cam that operates switch "S6" so the above can be accomplished.
10. Move the right dancer arm to the left. Switch "S8" N.C. contacts should open as the arm passes the "S8" template position.
11. Move the right dancer arm to the right and set cam "S7" so the N.O. switch contacts close at the "S7" template position.
12. Move the right dancer arm further to the right and set the cam so "S9" N.C. contacts open at the "S9" template position.

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SUPPLEMENT 39A-2 TO SERVICE ADVICE NO. 39A

POWER REELER ADJUSTMENT TEMPLATES



CUT OUT TEMPLATES FOR USE WHEN ADJUSTING CAMS ON REELER DANCER ARMS.

# Terminet 3000 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

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General Electric Company, U.S.A.

TO:

GENERAL DISTRIBUTION

TAB

SUBJECT

MODEM PRINTED CIRCUIT BOARD  
(MOD/3 PCB), 44A417330-003  
JUMPER NUMBERS

CATEGORY

Service Instruction

NO.

40

The jumpers on the first 100 MOD/3 PCB's, 44A417330-003 were numbered incorrectly. The jumper numbers on subsequent MOD/3 PCB's are correct and are the same as those on the MOD/1 PCB, 44A417330-001 (refer to Service Manual GEH-2185A for jumper information). The correct MOD/3 PCB's can be identified by a truncated red diamond (◊) stamped on the back of the board.

NOTE

The statement in Addendum 1 to GEH-2185A (page 17) that "the jumpers for the MOD/3 PCB are the same as the MOD/1 PCB" is not true for the 100 MOD/3 PCB's that were numbered incorrectly.

Use the following list for jumpering the incorrectly numbered (no red diamond) MOD/3 PCB's.

Transmitter Level (DBM)	0	H4	(B)	TO	J7	
	-3	H4	(B)	TO	J6	
	-6	H4	(B)	TO	J5	
	-9	H4	(B)	TO	J4	Factory Setting
	-12	H4	(B)	TO	J3	
Receive Sensitivity (DBM)	-40	H3	(A)	TO	J2	Factory Setting
	-50	H3	(A)	TO	J1	
Request To Send - On		H5	(D)	TO	J10	
- Controlled by Terminet Printer		H5	(D)	TO	J11	
- Controlled by Rec. Line		H5	(D)	TO	J12	Factory Setting
Normal - Transmit Data Connected to Terminet Printer		H6	(C)	TO	J9	Factory Setting
Test - Receive Data Connected To Transmit Data		H6	(C)	TO	J8	

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TAB

SUBJECT

PROCEDURE FOR CORRECTING DOUBLE  
PRINT AND U CORE BREAKAGE PROBLEMS

CATEGORY

Field Modification

NO.

41A

The keyboard senseline modification covered by this Service Advice should be made to only those B Model Terminet 300 Printers having keyboard problems such as (a) double print or key wiggle problems from keyboard operation, or (b) U core breakage. These problems have been isolated to the mounting location of the senseline board, and to the compensating core which is located in the front row, second position from the right of the senseline board (see Figures 1 and 3).

Material kits to affect keyboard modification will consist of the following:

- 1 Roll of .0025" Mylar tape, 1/4" wide.
- 100 Fiber spacers, 44A235709-001
- 20 U cores, 44A355938-001 (to be used as replacements if any are damaged during removal)
- 20 Ferrite bars, 44A355939-001
- 1 Bottle of Loctite IS06 (date coded)
- 40 Fishpaper shims .015" thick, .370" wide, 2.000" long

The problems outlined above may be corrected by performing the following steps. The items marked with an asterisk refer to the double print and key wiggle problem.

1. Remove keyboard.
2. Remove four (4) screws holding bottom cover plate.
3. Remove four (4) screws holding senseline driver assembly.
4. Remove senseline driver assembly from keyboard.
5. Remove the three (3) panhead screws near the edge of the printed circuit board and loosen the three flat head screws in the center of the board.
6. Turn over senseline assembly so the metal plate is on top.
7. Remove the three (3) nuts and star washers holding the metal plate to the printed circuit board. (Be careful not to drop the six fiber washers).
- \*8. With printed circuit board in the up position, use a small screw driver to pry off the ferrite bar from the compensating core.
- \*9. Clean excess tape off ferrite bar and U core with a razor blade.
- \*10. Put a small drop of Loctite<sup>1</sup> on the ferrite bar and attach it to a piece of .0025" mylar tape. Trim excess tape around edge with a razor blade.
- \*11. Replace ferrite U core in printed circuit board (front row, second position from the right).

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# TermiNet 3000 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

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TO:  GENERAL DISTRIBUTION	TAB	SUBJECT PROCEDURE FOR CORRECTING DOUBLE PRINT AND U CORE BREAKAGE PROBLEMS	NO. 41A
		CATEGORY Field Modification	

- \*12. Place a small drop of Loctite on each flat of the U core.
- \*13. Place ferrite bar with mylar tape squarely on top of U core (see Figure 3) keeping inside edges flush. (Caution: Loctite sets within 10 seconds).
14. Replace any broken, damaged or missing U cores. Do not replace double-back tape on plate. Make sure there is no foreign matter under any of the U cores.
15. Install the new provided spacers in addition to the original spacers on the printed circuit board.
16. Using the screws for alignment, position the plate over the printed circuit board and assemble.
17. Observe each ferrite U core for proper seating in the printed circuit board.
18. Tighten all screws, insuring the six fiber spacers and provided spacers are inserted in their respective positions.
19. Add 1/2" wide protective tape (see list of recommended tapes below) on the solder side of the senseline printed circuit board. Apply one layer of tape between the two rows of U cores, and two additional layers on either end of the board over the top of the first layer. Extend the short strips up to the outer flat head screws as illustrated in Figure 1. Tape must be Kapton<sup>2</sup> type, .0025" thick.
20. Glue the two (2) fishpaper shims to either end of the senseline mounting plate so that the fishpaper will be between the mounting plate and the keyboard casting when the senseline assembly is installed in the keyboard. See Figure 2.
21. Install senseline driver in keyboard and attach keyboard to Printer.
22. Apply power and check operation of each keyboard key.

Recommended Kapton Type Tapes

- Permacel<sup>3</sup> EE6379
- 3M<sup>4</sup> #92
- Mystic<sup>5</sup> 7361
- Connecticut Hard Rubber 250

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- 2 E.I. DuPont deNemours Company, Inc.
- 3 Permacel
- 4 3M Company
- 5 Borden Chemical Inc.

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		CATEGORY Field Modification	

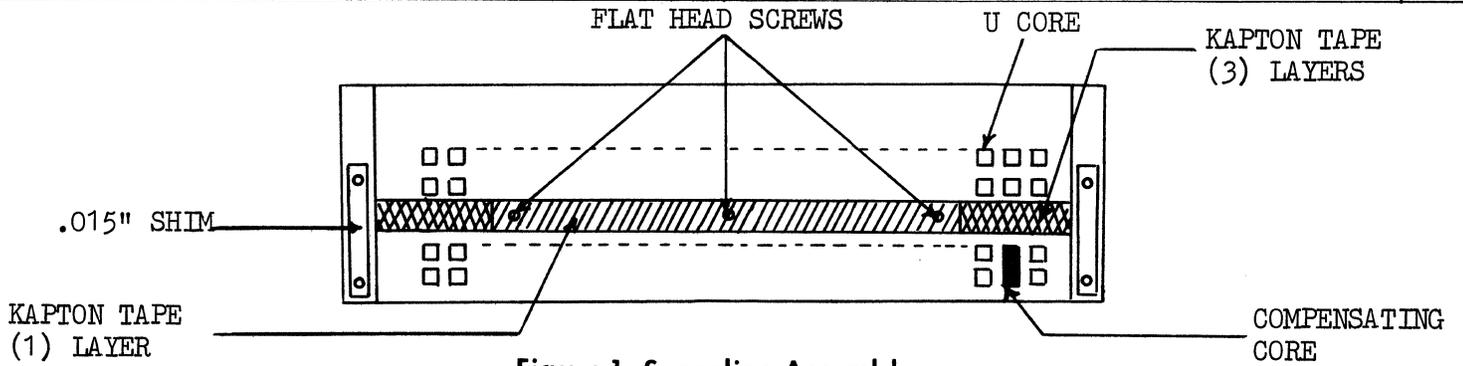


Figure 1. Senseline Assembly

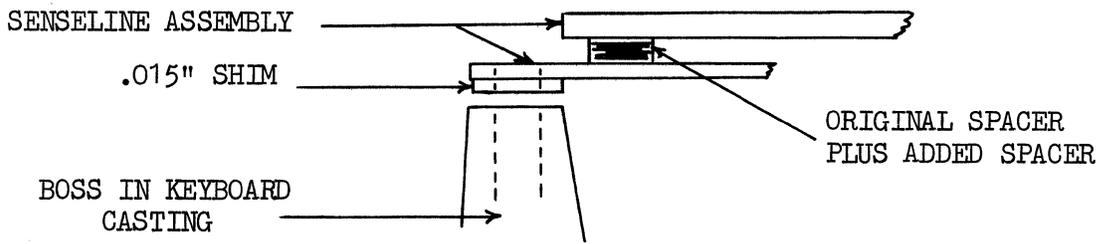


Figure 2. Senseline Mounting

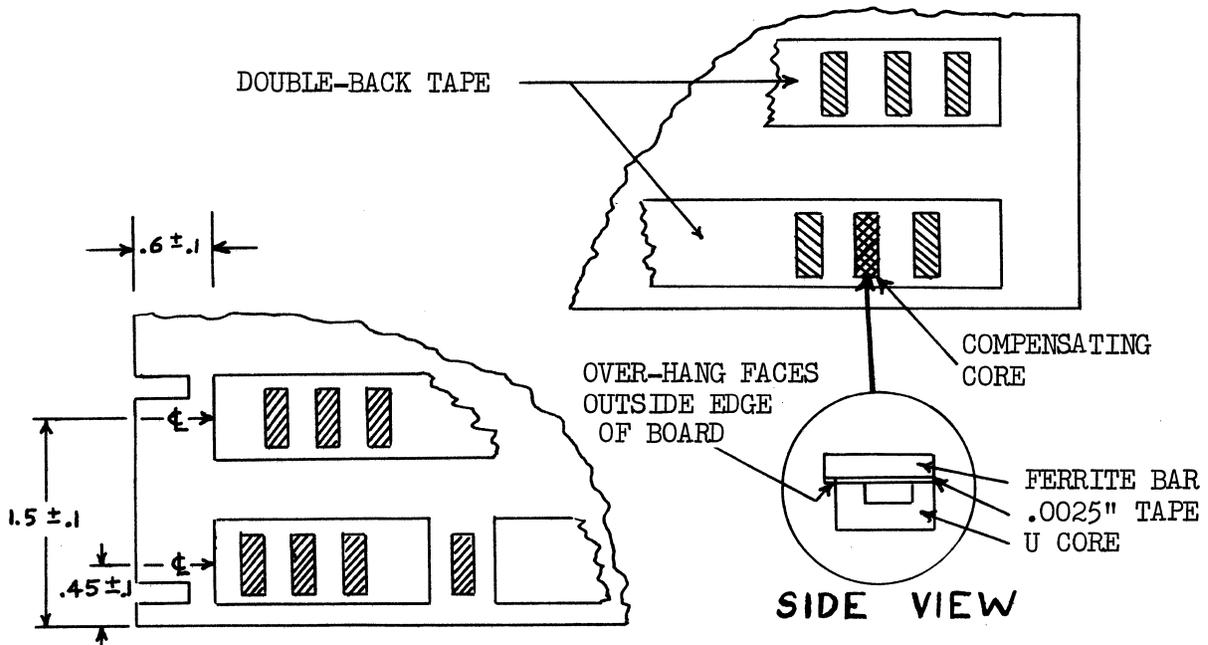


Figure 3. U Core Mounting

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TO:  GENERAL DISTRIBUTION	TAB	SUBJECT  PAPER TAPE JAMMING	NO.  42
		CATEGORY  Service News Letter	

Some of the major causes of tape jamming in the Punch have been identified. The problems along with recommended corrective action are as follows:

### STATIC CHARGE BUILD-UP

Chad build-up due to electrostatic charges on the plastic chad cover has been found to cause tape jamming. This condition is aggravated in environments where the air is hot and dry such as that found in many heated buildings during the winter months. To eliminate the problem, the plastic chad cover should be removed and cleaned by washing in soap and warm water. After the chad cover has completely dried the inside should be coated with a graphite solution (same as used for coating print belts) by swabbing the solution on with a cotton tip. The part number for the graphite solution is 44A410695-G01. After drying, a semi transparent to almost opaque coating should be evident on the inside of the cover over the mounting surface end. This procedure should be repeated during the regular PM's if necessary.

### FULL CHAD BOX

Failure to empty the chad box when it is full can also be the cause of tape jamming in the Punch. A good practice for operators is to empty the chad box each time a new roll of paper tape is installed in the Punch drawer. In some customer applications where the Punch is getting constant use, it may be more convenient for the customer to remove the chad box and place a large container (cardboard carton, etc.) directly under the Punch drawer for collecting chad. Caution decals are now being placed in all production Punch drawers to remind operators to empty chad. In addition, a supply of these decals was shipped to each shop so that Punch drawers in the field could be updated. The decal should be located on the bottom and near the rear of the drawer directly under the tape spool.

### GLUE ON TAPE

Each new roll of paper tape has the lead end attached to the roll by means of a spot of glue. The portion of tape containing this glue has been known to jam the Punch by sticking in the Punch die. This problem can be avoided if the operator will pull off and discard the first few feet of tape from the spool. This will insure that all tape containing any traces of glue is disposed of before threading the tape through the Punch die.

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TO:  GENERAL DISTRIBUTION	TAB	SUBJECT  Standard Jumper Configurations	
		CATEGORY  Service Instruction	NO.  43

This Service Advice specifies the standard jumper configuration for each printed circuit board used in the C Model Terminet 300 Printer and associated equipments. These standard configurations will be used in most units shipped unless special customer requirements dictate otherwise. Requests for post delivery changes in jumper configuration by the customer are chargeable to the customer.

<u>BOARD</u>	<u>JUMPERS INSTALLED</u>	<u>JUMPERS OMITTED</u>
ANSC/1	3J, 4J	1J, 2J
ANSC/2	1J, 2J, 3J	4J
ANSC/3	1J, 2J, 3J	4J
ASXC/1	2J, 3J, 4J, 19D-25D and 28D-34D	1J

NOTE: Jumpers and diodes are installed in positions marked on board.

GLCC/3	1J, 2J	
GLCC/4	Cup 1 to Cup 6	Cup 3 and Cup 4
GLCC/5	Cup 2 to Cup 5	
CONV/1	Factory Jumpers	
DATC/1	2J, 4J, 5J, 6J	1J, 3J
DATC/2	2J, 5J, 6J	1J, 3J, 4J
DATC/3	1J, 4J, 5J, 6J	2J, 3J
DATI/1	1J, 5J, 6J	2J, 3J, 4J
DATI/2	1J, 2J, 4J, 5J, 6J	3J
DATI/3	1J, 4J, 5J, 6J	2J, 3J
DECC/3	None	
DECC/4	None	
DPS/1	Factory Jumpers	
DPS/2	Factory Jumpers	
HDC (all)	Factory Jumpers	
HTBC/2	None	
JCTC (all)	None	
LDIC/1	None	
LED (all)	None	

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TO:  GENERAL DISTRIBUTION	TAB	SUBJECT  Standard Jumper Configurations	NO.  43
		CATEGORY  Service Instruction	

<u>BOARD</u>	<u>JUMPERS INSTALLED</u>	<u>JUMPERS OMITTED</u>
LMPC/3	None	
MBC (all)	Factory Jumpers	
MEMC/3	1J, 3J	2J, 4J
NOTE:	When installed in 75 column unit, 1J is removed. No 3J or 4J on Rev. 000.	
MEMC/5	1J, 4J	2J, 3J
NOTE:	When installed in 75 column unit, 1J is removed.	
MEMC/6	1J, 3J	2J, 4J
NOTE:	When installed in 75 column unit, 1J is removed.	
MEMC/7	1J, 4J	2J, 3J
NOTE:	When installed in 75 column unit, 1J is removed.	
PMEM/1	2J, 4J	1J, 3J, 5J
PMEM/2	2J, 5J	1J, 3J, 4J
FMEM/1	1J, 4J, 6J	2J, 3J, 5J
NOTE:	When installed in 75 column unit, 6J is removed.	
FMEM/2	1J, 5J, 6J	2J, 3J, 4J
NOTE:	When installed in 75 column unit, 6J is removed.	
FMEM/3	1J, 4J, 6J	2J, 3J, 5J
NOTE:	When installed in 75 column unit, 6J is removed.	
FMEM/4	1J, 5J, 6J	2J, 3J, 4J
NOTE:	When installed in 75 column unit, 6J is removed.	
202/1	1J, 2J	3J
202/2	2J, 3J	1J, 4J
MOD/1 & 3	H3 (A) to J3 H4 (B) to J14 H5 (D) to J16 H6 (C) to J6	
PARC/1	2J	1J, 3J, 4J
PC	None	
PCAC/2	None	
PCHB/1	None	
POWC/4	Factory Jumpers	
PROC/2	None	

PREPARED BY  
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ISSUED BY  
R.A. Prudhomme

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4/26/72

SUPERSEDES  
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# Terminet 3000 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

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TO:  GENERAL DISTRIBUTION	TAB	SUBJECT  Standard Jumper Configurations
	CATEGORY  Service Instruction	NO.  43

<u>BOARD</u>	<u>JUMPERS INSTALLED</u>	<u>JUMPERS OMITTED</u>
PSCC/1 (Rev. 000 to 003) (Rev. 004 and up)	3J Cup 1 to Cup 2	1J, 2J, 4J, 5J 4J, 5J, and Cups 3 through 6
NOTE: Diodes are used to connect cups 1 through 6 and 1J, 2J and 3J.		
PSCC/2 (Rev. 000 to 003) (Rev. 004 and up)	3J, 4J Cup 1 to Cup 2, 4J	1J, 2J, 5J 5J and Cups 3 through 6
NOTE: Diodes are used to connect cups 1 through 6 and 1J, 2J and 3J.		
PSCC/3 and 4	Cup 1 to Cup 2 Cup 11 to Cup 12 9J, 16J	5J, 10J, 11J, 17J Cups 3 through 10
NOTE: Diodes are used to connect Cups 1 through 12.		
RDRB/1	None	
R&PC/3	Cup 5 to Cup 6	1J, Cups 1 through 4
R&PC/5	Cup 5 to Cup 6	1J, Cups 1 through 4
R&PC/6	Cup 5 to Cup 6	1J, 2J, Cups 1 through 4
R&PC/7	Cup 5 to Cup 6	1J, 2J, Cups 1 through 4 <i>Rel. off on line only</i>
NOTE: Diodes are used to connect Cups 1 through 6 on all R&P boards.		
SLC/1	Factory Jumpers	
SPCC/2, 3, 4 & 5	1J	2J, 3J
T&AC/2	None	1J, 2J
TXPC (all)	None	
TLP	None	
TMC	None	
TPS	None	
TRP/1	1J, 2J, 3J	
TRP/2	1J, 3J, 4J	2J, 5J
TUC	None	
VTFC/3	None	
VTP (all)	None	

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# Terminet 3000 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

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<b>TO:</b>  GENERAL DISTRIBUTION	<b>TAB</b>	<b>SUBJECT</b> C MODEL PRINTERS WHICH WILL NOT FUNCTION PROPERLY WITH A TCA OR AN "A" MODEL DESK CONSOLE	<b>NO.</b> 44
		<b>CATEGORY</b> Service News Letter	

Approximately 200 new C Model Printers from early production were shipped which will not function properly with a Terminet Cassette Accessory or an A Model Desk Console. Otherwise, all other applications should be normal. These Printers have two pins missing from the punch connector on the mother board. If customer requirements make it necessary to replace the bustle and mother board assembly on one of these Printers, call Customer Service in Waynesboro for details on the exchange and charging instruction before beginning the work.

Following is a partial listing of the serial numbers (last four digits) on these Printers. The remainder are in the General Electric Appliance Park system.

4073	4410	4485	4541	4546	4552	4558	4564	4571
4112	4411	4512	4542	4547	4553	4559	4565	4572
4215	4433	4535	4543	4548	4554	4560	4566	4573
4400	4438	4539	4544	4549	4556	4561	4569	4642
4409	4439	4540	4545	4551	4557	4562	4570	

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# Terminet 300 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

General Electric Company, U.S.A.

TO:  GENERAL DISTRIBUTION	TAB	SUBJECT CHANGE IN CONNECTION POSITION IDENTIFICATION ON CONNECTOR 44A333473	NO. 45
		CATEGORY Service Instruction	

Starting approximately with fiscal week one (1), 1972, some of the plug connectors used in the Terminet Printer, Desk Console, and Terminet Cassette Accessory were changed to a new type using different connection position identification. Since it will be some time before all of the drawings involved can be changed, the cross reference table below should be useful whenever the new connector is encountered while circuit troubleshooting. These connectors are also used in the Printer for connecting the coil bank leads and frame and drive harness to the HDC Printed Circuit Board.

CONNECTOR CROSS REFERENCE TABLE

N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
O	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33
N	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U
O	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34

- N - New Connector Position Identification
- O - Old Connector Position Identification

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# Terminet 3100 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

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DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

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GENERAL DISTRIBUTION

TAB

SUBJECT

INSTRUCTIONS FOR USING LAMP  
PULLER 128A4084P9-150

CATEGORY

Service Instruction

NO.

46

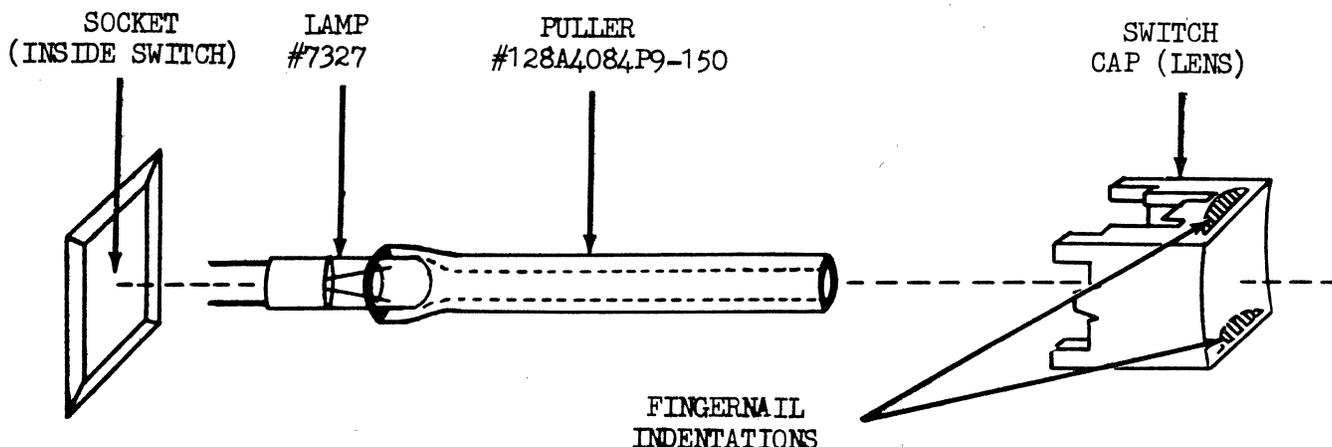
The lamp puller, which is a 1 1/2" long piece of plastic tubing, ASTM Size 6 with an approximate wall thickness of .020", is required when replacing a panel indicating lamp (#7327) on either the C Model Terminet Printer or the Terminet Cassette Accessory. The lamp puller is not required when replacing the lamp (#327) in earlier Model Printers or the ASR Desk Console as the lamp is replaced in the switch cap after it is removed from the switch. No special tools are required for the #327 lamp replacement.

Instructions for replacing the #7327 are as follows:

1. Remove the switch cap (lens) by pulling it straight out. The cap has two small indentations for the thumb and finger nails (see sketch below).
2. After the cap is removed, the burned out lamp is removed from the switch socket by pushing either end of the lamp puller onto the lamp until the lamp is firmly gripped by the puller. The lamp can then be pulled straight out of the socket, removed from the puller and discarded.
3. The new lamp is inserted in the socket by rotating the lamp slightly by hand until it seats into place.
4. The switch cap is then replaced on the switch by keeping the two indentations on the top and bottom.

### HINT

A small screwdriver, nail file, letter opener, or similar tool may be useful to assist in removing stubborn caps by inserting the end of the tool in the top cap indentation and gently prying until the cap is free.



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# TermiNet<sup>\*</sup> DATA COMMUNICATION PRODUCTS

## SERVICE ADVICE

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TO:  GENERAL DISTRIBUTION	TAB	SUBJECT SHOP REPAIR OF HDAD AND HDC BOARDS	
		CATEGORY Service Instruction	NO. 52A

**SUBJECT:** Shop Repair of HDAD (44C414126) and HDC (44C414166) Boards

**PURPOSE:** Outline procedure for shop testing and replacement of components on "Hammer Selection" portion of the listed boards.

**LIMIT:** Replace only diodes, resistors, and SCR's found on drawing # 44D400219 in DCP-1076, Elementary Diagrams. No other repair or replacement of components on the above listed boards is permitted.

**EQUIPMENT:** Voltmeter, grounded pencil soldering iron (maximum rating of 15 watts; suggested Ungar "princess" 3 wire), needle nose pliers, solder vacuum, new Rosin core solder.

**PROCEDURE:**

A. IDENTIFY SYMPTOMS

I. Continuous hammer fire in same position

CAUSES:

Shorted SCR  
Possible 101R open

II. Random fire in extra columns

CAUSES:

Open diodes  
HZ -- H112  
(Drive Line Diodes)

III. No fire in particular columns

CAUSES:

First - check wiring continuity  
Open diode - 101D - 220D (Gate Diodes)  
Open SCR - 101 -- 220  
Open Resis. - 301R -- 420R (Drive Line Resis.)  
Shorted Diode - HZ -- H112 (Drive Line Diodes)

B. TEST COMPONENTS SUSPECTED

Diodes - check for one way flow  
Resis. - check  per diagram #44D400219  
SCR - check for shorts or open

Check for broken runs also.

PREPARED BY R.A. Prudhomme	ISSUED BY R.A. Prudhomme	DATE 9/18/72	SUPERSEDES ISSUE DATED 9/8/72	PAGE 1 of 3
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TO:  GENERAL DISTRIBUTION	TAB	SUBJECT SHOP REPAIR OF HDAD AND HDC BOARDS	NO. 52A
		CATEGORY Service Instruction	

**C. REMOVE BAD COMPONENT**

Unsolder leads, draw off solder, remove part.

CAUTION: Do Not Overheat copper runs on the board as this can cause copper to separate from board and render the board unusable.

**D. INSTALL NEW COMPONENT**

Use extreme caution when re-soldering components so as not to damage components or create solder "shorts" on the board.

**E. Clean area with cleaning solution and non-conducting brush before installing. (Recommended board cleaning solution: Denatured alcohol).**

**F. RECHECK**

Before applying power, inspect repair work to assure that no contaminants remain on the repaired board.

Test new component to insure no damage was incurred during installation.

**G. REQUIRED REPAIR PARTS AVAILABLE FROM DCPD, WAYNESBORO, VA.**

Only the parts listed below are to be used for replacement as defined per this instruction. No substitution of other parts shall be permitted.

Minimum quantity order per part is 25 or multiples thereof.  
Minimum order billing is \$50.00

HDC & HDAD

<u>Part</u>	<u>Part #</u>	<u>Unit List Price</u>	
SCR	44A417337-001	0.57	
Resistor	44B310030-F10	0.04	(101R-220R)
Resistor	44B310030-F56	0.04	(301R-420R)
Diode	44B232028-001	0.08	

**PREPARED BY**

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TO:  GENERAL DISTRIBUTION	TAB	SUBJECT SHOP REPAIR OF HDAD AND HDC BOARDS	
		CATEGORY Service Instruction	NO. 52A

#### H. QUALIFIED REPAIR PERSONNEL

Only those technicians qualified to perform printed circuit board repair work shall be permitted to perform the above repair/replacement work on Terminet boards.

#### I. QUALITY CONTROL OF SHOP REPAIRED BOARDS

The quality level of shop repaired boards shall be sufficient to permit proper functional operation in an environment of 10% to 95% relative humidity, and +32°F to +120°F; the appearance and mechanical/electrical stability following repair shall be at least equal to that of a factory repaired board. Quality guidelines are as follows: (1) broken copper runs must be repaired using separate wire connections; (2) repairable breaks in copper conductors shall not exceed 5; (3) repairable component feedthroughs shall not exceed 5; (4) repair at component pads and feedthroughs must permit solder flow between the bottom pad to the top pad. Boards which do not comply with the above quality standards as a result of the mode of failure or as a result of the repair process must not be returned to field use.

PREPARED BY R.A. Prudhomme	ISSUED BY R.A. Prudhomme	DATE 9/18/72	SUPERSEDES ISSUE DATED 9/8/72	PAGE 3 of 3
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**SERVICE ADVICE**

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GENERAL DISTRIBUTION	<b>TAB</b>	<b>SUBJECT</b>	
		DATC/6 JUMPER FUNCTIONS	
		<b>CATEGORY</b>	<b>NO.</b>
		Service Instruction	54

This Service Advice specifies the jumper functions for the DATC/6 bustle board used on both the Terminet 300 and Terminet 1200 Printers. The DATC/6 is strictly a Printer Control Board; it does not have Data and Line Control interfaces.

The configuration of jumpers 2J, 3J, and 4J determine which model Printer the board is to be used in. The remaining jumpers perform the same functions in both Printer models. There is no jumper 1J on the DATC/6 board.

Description and configuration of jumpers.

Terminet 300 Printer Only

- 2J - Always in
- 3J - Always out
- 4J - Always in

Terminet 1200 Printer Only

- 2J - Always out
- 3J - Always in
- 4J - Always out

Both Terminet 300 and Terminet 1200 Printers

- 5J - When in, provides automatic motor control
- 6J - When in, enables motor to be turned off upon receipt of EOT
- 7J - When in, enables low paper condition to:
  - a. Light the ALARM lamp
  - b. Sound the momentary alarm tone
  - c. Transmit a "Break" signal
  - d. Turn the motor off
  - e. Turn the reader off

With 7J removed, low paper condition will light the ALARM lamp only.

<b>PREPARED BY</b> M. E. Tutwiler	<b>ISSUED BY</b> R. A. Prudhomme	<b>DATE</b> 5/3/73	<b>SUPERSEDES ISSUE DATED</b>	<b>PAGE</b> 1 of 1
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GENERAL DISTRIBUTION	TAB	SUBJECT	
		ASXC/1 JUMPER CONFIGURATION	
	CATEGORY	Service Instruction	NO. 55

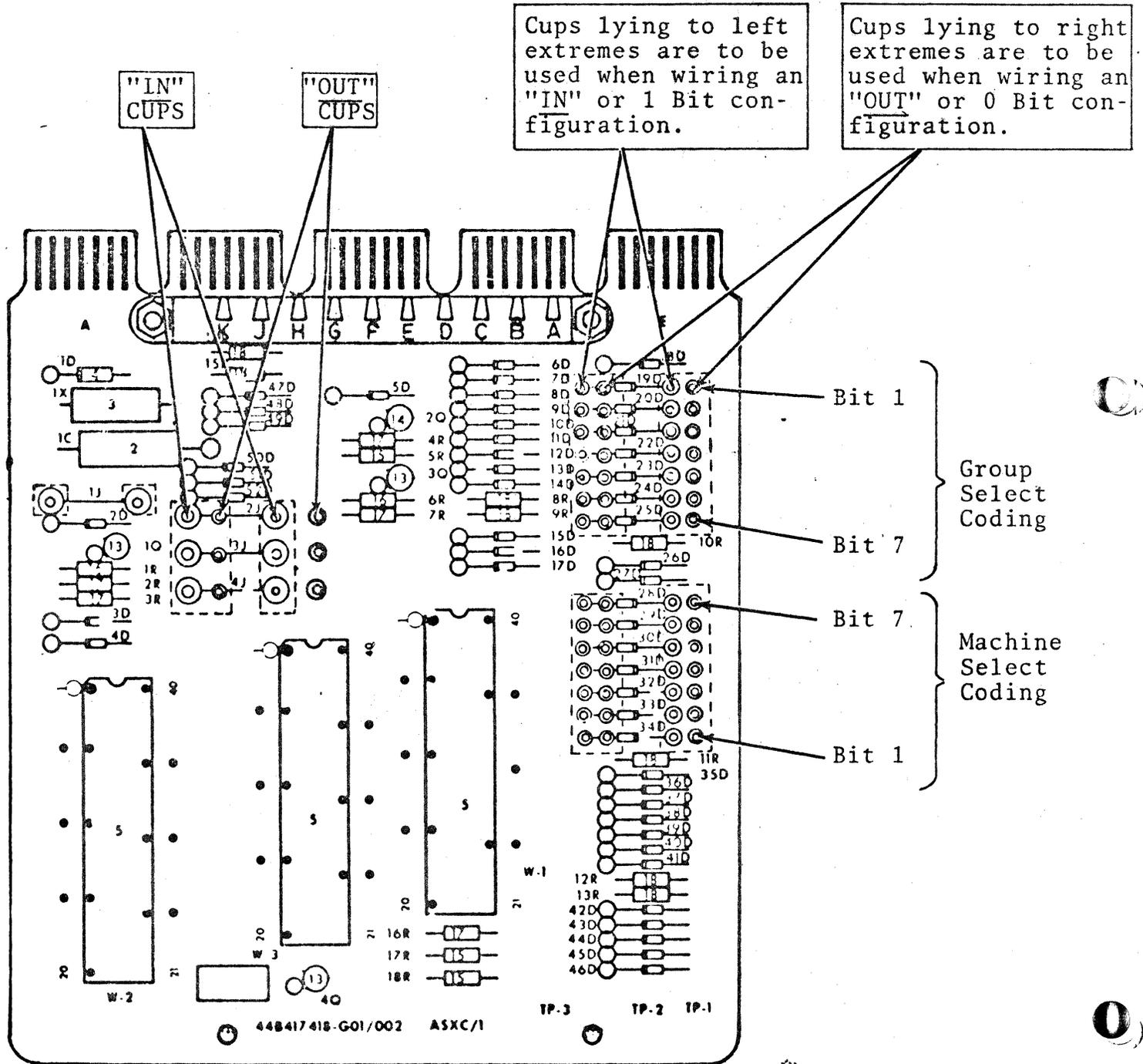
This service advice specifies the wire and diode jumper configurations for the ASXC/1 bustle board. Refer to the drawing on the back to supplement these instructions.

1. Wire jumpers 2J, 3J, & 4J and all diode jumpers must be installed in either of two modes on the board. Wire jumper 1J can be removed from the board to allow transmission without selection.
2. Jumper cups lying to the right extremes are to be used when wiring an electrically "out" or 0 bit condition.
3. Jumper cups lying to the left extremes are to be used when wiring an electrically "in" or 1 bit condition.
4. The upper right grouping of diodes is for Group Select coding.
5. The lower right grouping of diodes is for Machine Select coding.
6. The Bit numbering of the cups proceed as shown on the drawing.
7. When jumper 3J is wired "out", the Machine Select diode coding is electrically disabled.
8. When jumper 4J is wired "out", the Group Select diode coding is electrically disabled.
9. When jumper 2J is wired "out", answerback response to received ENQ is disabled during selection.

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DATA COMMUNICATION PRODUCTS DEPARTMENT  
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TO:  GENERAL DISTRIBUTION	TAB	SUBJECT  ASXC/1 JUMPER CONFIGURATION	NO. 55
		CATEGORY Service Instruction	



44B41741B-G01/002 ASXC/1 TP-3 TP-2 TP-1

PREPARED BY M. E. Tutwiler	ISSUED BY R. A. Prudhomme	DATE 4/26/73	SUPERSEDES ISSUE DATED	PAGE 2 of 2
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# Terminet<sup>\*</sup> DATA COMMUNICATION PRODUCTS

## SERVICE ADVICE

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 ---TELEPHONE 703-942-8161

Trademark General Electric Company, U.S.A.

GENERAL DISTRIBUTION	<b>TAB</b>	<b>SUBJECT</b>	1200 BAUD INTERNAL MODEM 44A417710-001/002/004
		<b>CATEGORY</b>	Service Instruction
		<b>NO.</b>	56

### PURPOSE

The purpose of this Instruction is to cover Installation and Operation of the 1200 Baud Internal Modem which is optional on the Terminet Printer. This option is a printed circuit board which fits into the MOD slot in the Bustle located at the rear of the Printer and corresponding data cable. This instruction covers the part 001 board which is used in switched network (dial up) telephone systems and the part 004 board which is used for four wire (Full Duplex) dedicated or private line systems. Reverse Channel capability is also available with the addition of the RCM printed circuit board (44A417710-002) option which fits into the RCM Bustle slot.

### INSTALLATION

Before starting installation, see Table 1 to verify that the correct data set cable is being used.

Table 1. Data Set Cables

Board Part No.	Data Access Arrangement	System	Cable Part No.
001*	CBS (Auto)	Half Duplex	44B412496-G01
001*	CDT (Manual)	Half Duplex	44B412733-G01
004	None	Full Duplex	44B412737-G01

\*The RCM option may be used in this configuration.

The data set cables are equipped with spade lugs to facilitate connection to the DAA device or transmission line. When using a CBS (Automatic) Data Access Arrangement (ADAA), the associated cable (44B412496-G01) will have the wire leads as shown in Table 2.

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**SERVICE ADVICE**

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<b>TO:</b> GENERAL DISTRIBUTION	<b>TAB</b>	<b>SUBJECT</b> 1200 BAUD INTERNAL MODEM 44A417710-001/002/004	
		<b>CATEGORY</b> Service Instruction	<b>NO.</b> 56

Table 2. CBS ADAA Connections.

Terminet Data Set Connector Pin	Signal Name	Wire Color
1	Frame Ground	Bare
7	Signal Ground (SG)	White-Green
11	Coupler Cut Through (CCT)	White-Orange
12	Ring Indicator (RI)	White-Black
17	Off Hook (OH)	White-Blue
18	Switch Hook (SH)	White-Yellow
23	Request for Data Transmission (DA)	White-Red
24	Data Tip (DT)	White-Brown
25	Data Ring (DR)	White

When using a CDT (manual) Data Access Arrangement, the associated cable (44B412733-G01) has only two wires (not polarized) to be connected. These wires, connected to the Terminet data set connector pins 24 and 25 are Data Tip (DT) and Data Ring (DR).

The four wire system (using a part 004 board) and appropriate cable (44B412737-G01) will have the wire leads as shown in Table 3.

Table 3. Dedicated or Private Line Connections (Full Duplex).

Terminet Data Set Connector Pin	Data Line	Wire Color
17	Received	White
18	Received	Red
24	Transmitted	Black
25	Transmitted	Green

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GENERAL DISTRIBUTION	TAB	SUBJECT	1200 BAUD INTERNAL MODEM 44A417710-001/002/004
		CATEGORY	Service Instruction
		NO.	56

The next step in the installation is to check the modem board for the correct location of the wire jumpers. The transmit level of the board should be set to correspond with that of the DAA which will be marked by the telephone company. The RCM board (44A417710-002), if used, requires no transmit level adjustment as it is automatically set at 6 db below the wide band channel transmit level. See Tables 4, 5, and 6 for wire jumper options.

The potentiometer on the modem board is set at the factory and must not be tampered with in the field.

Table 4. Wire Jumper Options.

Modem Board 44A417710-001

OPTION	JUMPER
Transmit Level	*
-12 DBM	H <sub>3</sub> or C → J6
-9 DBM (Standard)	H <sub>3</sub> or C → J7 +
-6 DBM	H <sub>3</sub> or C → J8
-3 DBM	H <sub>3</sub> or C → J9
0 DBM	H <sub>3</sub> or C → J10
Reverse Channel In - If RCM Installed	H <sub>4</sub> or D → J11, H <sub>5</sub> or E → J12 +
Reverse Channel Out - No RCM Installed	H <sub>4</sub> or D → J12, H <sub>5</sub> or E → J13
Clear to Send (CB) After Request to Send CA and SCF (Reverse Channel)	H <sub>20</sub> or G → J15 +
Clear to Send (CB) After Request to Send CA	H <sub>20</sub> or G → J14

\*Letters "C", "D", etc. are wire flags and may not be installed.  
 H # is board marking for end of wire.  
 + Standard configuration.

Printers using the 1200 baud internal modem must be equipped with a DATC G02 board and a PSCC board with the line control option when used in a switched dial-up network or 2 wire private line. DATC/2 must not be strapped for either the status monitor or automatic motor control options. If the reverse channel option board is used (which is a highly recommended option) with the 44A417710-001 modem board, it is preferable to install jumper H<sub>20</sub> or G → J15 on the modem board.

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# TermiNet<sup>\*</sup> DATA COMMUNICATION PRODUCTS

## SERVICE ADVICE

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DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-0101

<b>TO:</b> GENERAL DISTRIBUTION	<b>TAB</b>	<b>SUBJECT</b> 1200 BAUD INTERNAL MODEM 44A417710-001/002/004	<b>NO.</b> 56
		<b>CATEGORY</b> Service Instruction	

Table 5. Wire Jumper Options.

Reverse Channel Modem Board 44A417710-002

OPTION	JUMPER POSITION			
	H <sub>1</sub> or A	H <sub>2</sub> or B	H <sub>3</sub> or C	H <sub>10</sub> or D
REVERSE CHANNEL CARRIER Carrier Controlled by Secondary Transmitted Data (SBA)	J2	J3	J5	
Carrier on When Request To Send (CA) is Off	J1	J3	J4	*
Carrier on When Request To Send (CA) is On	J1	J2	J4	
REVERSE CHANNEL RECEIVER Delayed Secondary Received Data (SBB)				J6 *
Secondary Received Data (SBB)				J7 *

\*Denotes Configuration for Printer Use.

<b>PREPARED BY</b> M. R. Redmond	<b>ISSUED BY</b> R. A. Prudhomme	<b>DATE</b> 6/18/73	<b>SUPERSEDES ISSUE DATED</b>	<b>PAGE</b> 4 of 10
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**GENERAL ELECTRIC**

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Trademark General Electric Company, U.S.A.

TO:  GENERAL DISTRIBUTION	TAB	SUBJECT 1200 BAUD INTERNAL MODEM 44A417710-001/002/004	NO. 56
		CATEGORY Service Instruction	

Table 6. Wire Jumper Options.

Modem Board 44A417710-004

OPTION	JUMPER
Clear to Send Delay	
8.5 msec	H <sub>1</sub> or A    J3
60 msec	A    J2
200 msec (Standard)	A    J1 +
Transmit Level	
-12 DBM	H <sub>2</sub> or B    J8
-9 DBM	B    J7
-6 DBM	B    J6
-3 DBM	B    J5
0 DBM (Standard)	B    J4 +
Line Termination	
600 ohm Transmitter (Standard)	H <sub>3</sub> or C    J10 +
600 ohm Receiver (Standard)	H <sub>4</sub> or D    J11 +
900 ohm Transmitter	H <sub>3</sub> or C    J9
900 ohm Receiver	H <sub>4</sub> or D    J12
High Impedance Receiver	D    J24
Amplitude Equalizer	
Out (Standard)	H <sub>5</sub> or E    J14 +
In	E    J13
Delay Equalizer	
Out (Standard)	H <sub>6</sub> or F    J16, H <sub>7</sub> or
In	G    J23 +
Receive Line Signal Detector Sensitivity	F    J15, G    J16
-30 DBM (Standard)	H <sub>10</sub> or K    J21 +
-40 DBM	K    J22
Receive Line Signal Detector	
40 msec/12 msec (Standard)	H <sub>8</sub> or H    J17 +
6 msec/3 msec	H    J18
Receive Line Signal Detector Clamp	
In (Standard)	H <sub>9</sub> or J    J19 +
Out	J    J20

+ Standard Configuration

PREPARED BY M. R. Redmond CCD 259C (5-71)	ISSUED BY R. A. Prudhomme	DATE 6/18/73	SUPERSEDES ISSUE DATED	PAGE 5 of 10
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# TermiNet<sup>\*</sup> DATA COMMUNICATION PRODUCTS

## SERVICE ADVICE

\*Trademark General Electric Company, U.S.A.

### GENERAL ELECTRIC

DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-0

<b>TO:</b> GENERAL DISTRIBUTION	<b>TAB</b>	<b>SUBJECT</b> 1200 BAUD INTERNAL MODEM 44A417710-001/002/004	
		<b>CATEGORY</b> Service Instruction	<b>NO.</b> 56

The following boards should be verified for the preferred jumper options during installation of the 1200 baud modem for use on half duplex switched network systems.

<u>PRINTED CIRCUIT BOARD</u>	<u>POSITION OF JUMPERS</u>	
	<u>IN</u>	<u>OUT</u>
DATC/2	2J, 6J	1J, 3J, 4J, 5J
SPCC	1J	2J, 3J

The SPCC board must have the line control option.

After all applicable strapping options are selected, the installation is completed by performing the following steps:

1. Remove power from the Printer.
2. Remove the bustle cover and board clamp.
3. Insert the MOD board into the MOD bustle slot.
4. Insert the RCM board into the RCM bustle slot. (This step is eliminated if the reverse channel option is not used).
5. Check strapping options on DATC/2 and SPCC boards.
6. Install the board clamp and bustle cover.
7. Insert the plug end of the data set cable into the data set connector at the right rear of the Printer.
8. Connect the spade lugs at the other end of the data set cable to the appropriate terminals on the DAA. If a four wire private system is being used, connections will be made directly to the transmission line.
9. Restore power to the Printer.
10. Check the operation of the system.

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GENERAL DISTRIBUTION	<b>TAB</b>	<b>SUBJECT</b> 1200 BAUD INTERNAL MODEM 44A417710-001/002/004	<b>NO.</b> 56
		<b>CATEGORY</b> Service Instruction	

OPERATION

The 1200 baud internal modem printed circuit board and data cable when properly installed in the TermiNet Printer provides a built-in, 1200 baud communication capability. The main channel circuits and the data access arrangement controls are provided on one circuit board. The use of the -001 option will allow the Printer to operate in the "manual originate", "automatic answer" mode when connected to the public telephone network through a Telco provided CBS automatic data set access arrangement. Manual operation is also possible by making connection to a CDT data access arrangement and following the procedures for using manual set. A second board, reverse channel (if this option is selected) provides for a reverse signaling channel to indicate to the wide band transmitting terminal that it may proceed or continue to transmit to the receiving terminal.

The following operating instructions describe call establishment procedures when using the automatic data access arrangement CBS.

When the -001 modem is to be used with a manual data access arrangement (CDT), the following operating procedures should be amended to remove all reference to the automatic features. A major difference with the manual access arrangement is that the telephone exclusion key must be raised to permit the set to go into the Data Mode. This equipment requires manual intervention on both ends of the communication link.

Originating A Call

The local Printer's transmitter is turned on by pressing the ON LINE push-button. It is turned off by:

1. Changing the rate switch to the 120 cps rate (TermiNet 300 Printer only).
2. Pressing STANDBY or LOCAL.
3. Power turn-on cycle.
4. Line Control option.

The desired motor state is obtained by use of the Escape motor ON/OFF sequences. STANDBY will also occur when the rate switch on the TermiNet 300 Printer is changed to 120 cps and after a power turn-on cycle.

To originate a call, take the handset off hook and raise the exclusion key to dial. (On Manual Set, take handset off hook but do not raise the exclusion key to dial).

<b>PREPARED BY</b> M. R. Redmond	<b>ISSUED BY</b> R. A. Prudhomme	<b>DATE</b> 6/18/73	<b>SUPERSEDES ISSUE DATED</b>	<b>PAGE</b> 7 of 10
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**TermiNet** \* DATA COMMUNICATION PRODUCTS  
**SERVICE ADVICE**

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**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
 WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8101

<b>TO:</b>  GENERAL DISTRIBUTION	<b>TAB</b>	<b>SUBJECT</b> 1200 BAUD INTERNAL MODEM 44A417710-001/002/004	<b>NO.</b> 56
		<b>CATEGORY</b> Service Instruction	

In response to the ringing signal, the remote Printer will go off hook and provide a high pitched (2025 Hz) tone to disable echo suppressors. After this 3 second signal, the tone will:

1. Disappear - if reverse channel is not used and the called party is to receive first.
2. Drop in pitch (to 387 Hz) - if reverse channel is used and the called party is to receive first.
3. Drop in pitch (to 1200 Hz) - if the called party is to transmit first or has automatic Answerback.

Place handset in cradle after answertone ends. (With Manual Set do not replace handset in cradle and do raise the exclusion key to go into Data Mode).

Although the Printer includes filtering circuits to prevent room noise or talk from being detected as reverse channel, it is best to avoid exposure to such sounds by entering the data mode quickly - placing the handset in the cradle as if hanging up. The internal modem takes over at this point. This procedure is also required to prevent loss of an automatic answerback message when reverse channel is not used. If the data mode is entered during answertone, an interrupt may occur.

If for any reason the call does not produce answertone, hang up and wait 15 seconds before calling again.

Because of the arrangement of the ADAA, the modem will attempt to go into the data mode when the handset is replaced even if there is no answer, a busy signal, or a wrong number. The modem will time out in 12 + 4 seconds - in the meantime, however, the phone will be off hook so that an attempt to redial may not produce dial tone and may restart the timer.

The internal 1200 Baud modem is designed to operate properly when calling another station whether or not that station is equipped with reverse channel. If such mixed operation is anticipated, however, the local modem CLEAR TO SEND should not be jumpered to require reverse channel to be received before proceeding with answerback or tape transmission (Jumper G-J14 on -001 modem).

<b>PREPARED BY</b> M. R. Redmond	<b>ISSUED BY</b> R. A. Prudhomme	<b>DATE</b> 6/18/73	<b>SUPERSEDES ISSUE DATED</b>	<b>PAGE</b> 8 of 10
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# TermiNet 3000 DATA COMMUNICATION PRINTER

## SERVICE ADVICE

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

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TO:  GENERAL DISTRIBUTION	TAB	SUBJECT	1200 BAUD INTERNAL MODEM 44A417710-001/002/004
		CATEGORY	Service Instruction
			NO. 56

### Generating Line Turnaround Codes

The operator must end each message with the turn code ETX. This is labeled on the keyboard and is generated by pressing and holding the CTL key and then pressing and releasing the C key. Tapes prepared off-line must terminate with ETX and RDR OFF (DC3).

The turn codes which are received by a Printer which is to turn-around to transmit are: ETX, ACK, NAK (also lights interrupt lamp), ENQ (also causes transmission of ACK or NAK, which follows the Answerback message if this option is installed), and DLE? (Causes transmission of ENQ). Data Set Lead CA will be turned "On" following receipt of the above codes.

The turn codes which are transmitted by a Printer which is to turn-around to receive are: EOT (also turns motor off), ETX, ACK, NAK, ENQ, DLE EOT (also turns off motor and initiates line disconnect). Data Set Lead CA will be turned "Off" following transmission of the above codes.

The Printer will also turn the line around to receive:

1. After power turn on cycle.
2. On loss of reverse channel.
3. On receipt of an "interrupt" (capability to receive interrupt while in transmit mode requires use of RCM option).
4. On receipt of EOT (provided the 6J jumper installed on DATC/2).

The Printer will also turn the line around to transmit with automatic answerback upon receipt of a Ring Indicator.

### Answering A Call

The local Printer may be left in the desired state in anticipation of a call. However, since power interruptions may cause the Printer to lose memory of a preset state, it is preferable to plan on a procedure that uses the power turn on initial states of MOTOR OFF and RECEIVE.

If the local Printer includes the automatic Answerback option, it will answer in the following manner:

1. Off hook
2. Answer tone (3.0 seconds)
3. Carrier On

**PREPARED BY**

M. R. Redmond

CCD 259C (5-71)

**ISSUED BY**

R. A. Prudhomme

**DATE**

6/18/73

**SUPERSEDES  
ISSUE DATED**

**PAGE**

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**TermiNet 3100** DATA COMMUNICATION PRINTER  
**SERVICE ADVICE**

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
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\*Trademark General Electric Company, U.S.A.

TO:  GENERAL DISTRIBUTION	TAB	SUBJECT	1200 BAUD INTERNAL MODEM 44A417710-001/002/004
		CATEGORY	Service Instruction
			NO. 56

4. Wait for reverse channel (jumper option G on Modem Board)
5. Transmit Answerback message
6. Turn to receive

Without the automatic Answerback option the following steps will occur:

1. Off hook
2. Answertone (3.0 seconds)
3. Transmit or receive as preset

If the call answered is not a data call, or procedures are not followed - leaving both parties in a receive mode, or there is an equipment malfunction, at the end of 12 + 4 seconds the local Printer will hang up and return to STANDBY.

Reverse Channel

The reverse channel option is used to supply a supervisory signal to indicate to the wide band transmitting terminal that it may proceed or continue to transmit. The reverse channel carrier is turned on unless an interruption is desired. The circuits on the RCM board are designed in such a way that the loss of carrier rather than its absence is treated as a break. Because of this feature, a Printer having the reverse channel option will operate properly with Printers that may not have the option. Reverse channel may be used in "receive only" Printers to reflect terminal status (motor "on" versus motor "off" or alarm).

Automatic Data Access Arrangement (CBS) Options

When ordering the Automatic Data Access Arrangement the following options should be requested from the local telephone company; they are assumed in the above operating instructions.

1. Telephone Set Option - with telephone.
2. Telephone Set Exclusion Key Option - coupler controls line.
3. Telephone Set Ringer Option - ringer on line side of exclusion key, both coupler and telephone ring. (Preferred - not required).

PREPARED BY M. R. Redmond	ISSUED BY R. A. Prudhomme	DATE 6/18/73	SUPERSEDES ISSUE DATED	PAGE 10 of 10
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**TermiNet** DATA COMMUNICATION PRODUCTS  
**SERVICE ADVICE**

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TOC GENERAL DISTRIBUTION	TAB	SUBJECT	
		SINGLE POINT TABULATION OPTION	
		CATEGORY	NO.
		Service Instruction	57

The purpose of this Service Advice is to introduce the single point tabulation option. This function is provided by a new MEM Board known as SMEM and is available for the TermiNet 300 Printer. This option is designed to be used on Right Hand Split Form machines and Split Platen machines. The Part Number of the SMEM Board is 44B417455.

This option functions through the use of the BS code. The normal BS function is lost. Upon detection of a BS code, the column counter and column display will cycle to the preselected column in less than one character time. Any option currently available on TermiNet 300 Printers may be used with the single point tabulation option.

The option provides the following operation. BS is used to tab to the right hand form after printing has occurred on the left hand form. BS can be used with LF as a right form return if printing is to continue on the right hand form. The column number is strappable but the selected number must be smaller than the end-of-line number.

The SMEM Board has two groups. The SMEM/G01 Board is used in the 80 column Printers and the SMEM/G02 Board is used in the 75/118 column Printers. Both groups include removable jumpers for automatic, end-of-line, carriage return and for one or two color ribbons.

The board strapping options are as follows:

STRAPPING OPTIONS FOR GROUP 1 BOARDS

- 2J IN enables Automatic End of Line CR
- 3J IN for one color ribbon
- 4J IN for two color ribbon

STRAPPING OPTION FOR GROUP 2 BOARDS

- 1J IN for 118 column units
- 1J OUT for 75 column units
- 2J IN enables Automatic End of Line CR
- 3J IN for one color ribbon
- 4J IN for two color ribbon

PREPARED BY M. E. Tutwiler	ISSUED BY R. A. Prudhomme	DATE 5/17/73	SUPERSEDES ISSUE DATED	PAGE 1 of 2
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# TermiNet<sup>\*</sup> DATA COMMUNICATION PRODUCTS

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TO:  GENERAL DISTRIBUTION	TAB	SUBJECT  SINGLE POINT TABULATION OPTION	
		CATEGORY  Service Instruction	NO.  57

### DIODE OPTIONS - BOTH GROUPS

12D - 18D Selects the column return position when BS is keyed. The diodes select the column position as a binary number. A diode installed generates a "1" bit. A diode removed generates a "0" bit.

BIT NUMBER	7	6	5	4	3	2	1
DIODE NUMBER	17D	13D	15D	16D	14D	12D	18D

EXAMPLE: An SMEM Board with diodes 12D, 14D, 16D, & 13D installed yields a Binary Number of 0101110. This Binary Number decimal equivalent is 46, therefore a tab point is fixed at Print Column 46.

PREPARED BY M. E. Tutwiler	ISSUED BY R. A. Prudhomme	DATE 5/17/73	SUPERSEDES ISSUE DATED	PAGE 2 of 2
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**Terminet 3000** DATA COMMUNICATION PRINTER  
**SERVICE ADVICE**

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
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GENERAL DISTRIBUTION	TAB	SUBJECT MODIFICATION OF HPRA BOARD ON Terminet 1200 PRINTER	
		CATEGORY Service Instruction	NO. 58

A field modification\* is available which will lessen the sensitivity of the HPRA Board (44B417428-G01) to noise. This modification can possibly limit intermittent shutdown of the Terminet 1200 Printer when noise sensitivity is a problem.

We would like to see this modification put in every Terminet 1200 Printer during your next normal service call. A special call to do this modification is not necessary.

The modification is a simple one and should take you less than 1/2 hour to complete. The changes required are as follows:

1. Change 58R from 100K ohm to 150K ohm - use .25 watt, 5% resistors
2. Change 20R from 10K ohm to 4.7K ohm - use .25 watt, 5% resistors

Refer to the picture on the back to help locate these resistors.

Any Printer manufactured after fiscal week 14 of 1973 will already contain this change.

\*With regard to service administration by General Electric Service Shops, refer to R. L. Eppig's letter dated 7/3/73. This letter was directed to all United States General Electric Service Shops.

PREPARED BY M. E. Tutwiler	ISSUED BY R. A. Prudhomme	DATE 5/30/73	SUPERSEDES ISSUE DATED	PAGE 1 of 2
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# Terminet<sup>\*</sup> DATA COMMUNICATION PRODUCTS

## SERVICE ADVICE

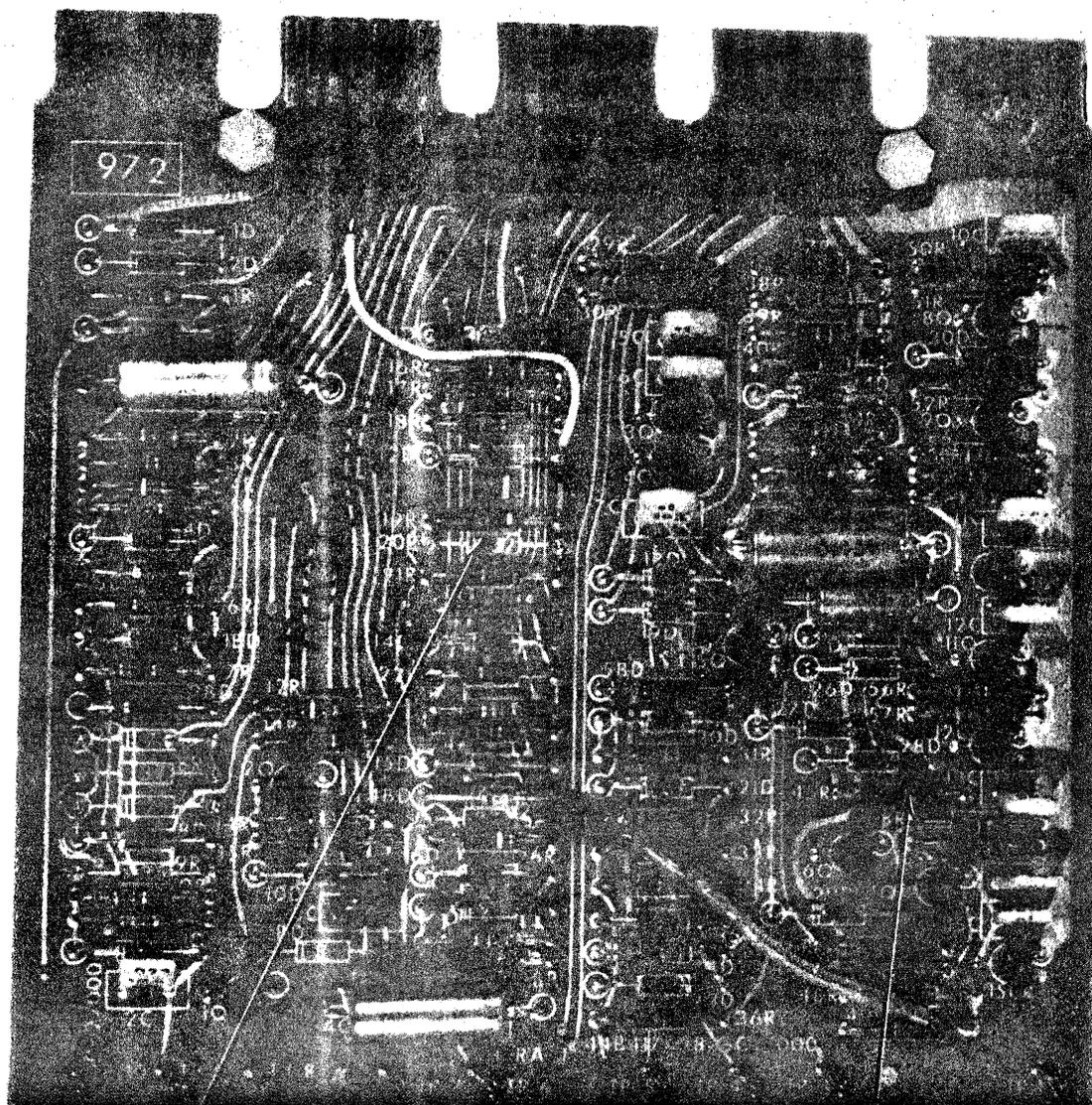
\*Trademark General Electric Company, U.S.A.

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DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-0101

TO:  GENERAL DISTRIBUTION	TAB	SUBJECT MODIFICATION OF HPRA BOARD ON Terminet 1200 PRINTER	NO. 58
		CATEGORY Service Instruction	

HPRA BOARD (44B417428-G01)  
FOR Terminet 1200 PRINTER



20R

58R



PREPARED BY M. E. Tutwiler	ISSUED BY R. A. Prudhomme	DATE 5/30/73	SUPERSEDES ISSUE DATED	PAGE 2 of 2
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# Terminet<sup>\*</sup> DATA COMMUNICATION PRODUCTS

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GENERAL DISTRIBUTION	<b>TAB</b>	<b>SUBJECT</b>	
		MODIFICATION OF THE MOTHER BOARD VTFF CONNECTION	
		<b>CATEGORY</b>	<b>NO.</b>
		Service Instruction	60

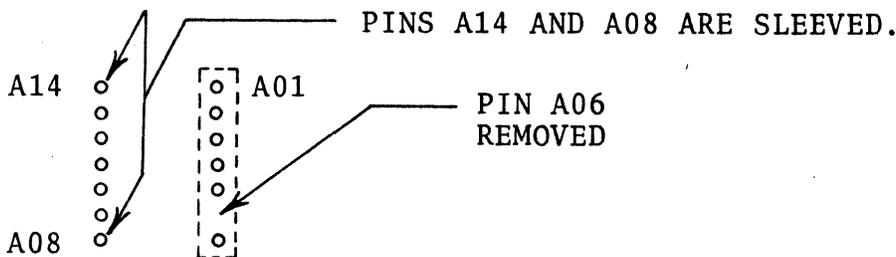
A change has been made on Terminet 300 and Terminet 1200 Mother Boards. Pin 6 on the VTFF connector has been removed. This change, effective 7/31/73, has been made to ease orientation and connection of the VTFF assembly plug.

The plug on all new VTFF assemblies is built so it will key on this re-designed Mother Board connector.

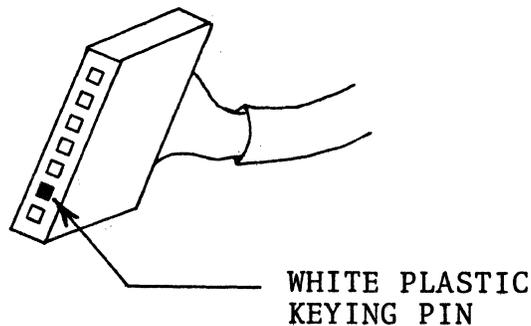
Printers with Mother Boards built prior to 7/31/73 will have to be modified before a new VTFF assembly can be connected to it.

The modification consists of removing pin 6 on the old Mother Board VTFF connector. Do not remove the keying pin from the VTFF assembly plug, however, for this would defeat the keying effect.

### VTFF MOTHERBOARD CONNECTOR (J9)



### NEW TYPE PHOTOCELL PLUG (P9)



<b>PREPARED BY</b> M. E. Tutwiler	<b>ISSUED BY</b> R. A. Prudhomme	<b>DATE</b> 7/16/73	<b>SUPERSEDES ISSUE DATED</b>	<b>PAGE</b> 1 of 1
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CCD 259C (5-71)

# Terminet<sup>\*</sup> DATA COMMUNICATION PRODUCTS

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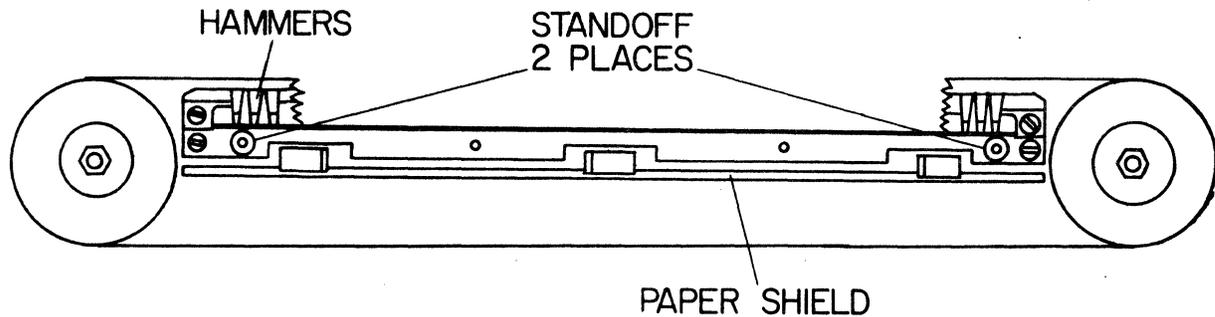
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DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

TO:  GENERAL DISTRIBUTION	TAB	SUBJECT MISSING STANDOFFS ON FORMS TRACTOR PRINTERS	NO. 66
		CATEGORY Service Instruction	

A few Terminet 300 Printer Tractor models have been shipped from the plant with two standoffs missing. These standoffs mount on top of the hammer-bank and hold the paper shield off of the Platen. Without these standoffs, proper paper feeding cannot occur.

The drawing below shows the standoff locations. Their part number is 44A410778-001 and they are mounted with 2-56 x .25" Allen head screws (N170P5004C).



If you encounter Printers in the field without these standoffs, they should be added. The longer screws, listed above, must be used when mounting the standoffs. The screws now used are too short.

**CAUTION**

The Rebound Bar setting is critical!  
Remove, replace, and tighten one screw  
at a time when installing the standoffs.

PREPARED BY M. E. Tutwiler	ISSUED BY R. A. Prudhomme	DATE 11/7/73	SUPERSEDES ISSUE DATED	PAGE 1 of 1
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CCD 259C (5-71)

# Terminet<sup>\*</sup> DATA COMMUNICATION PRODUCTS

## SERVICE ADVICE

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GENERAL DISTRIBUTION	<b>TAB</b>	<b>SUBJECT</b>	
		LUBRICATION OF PAPER SHIELD ROLLERS	
		<b>CATEGORY</b>	<b>NO.</b>
		Service Instruction	67

If your friction feed Terminet 300 Printer experiences paper bunching under the plastic paper shield, check the paper shield rollers for freedom of movement. If the rollers are tight or bound, they may need to be re-lubricated.

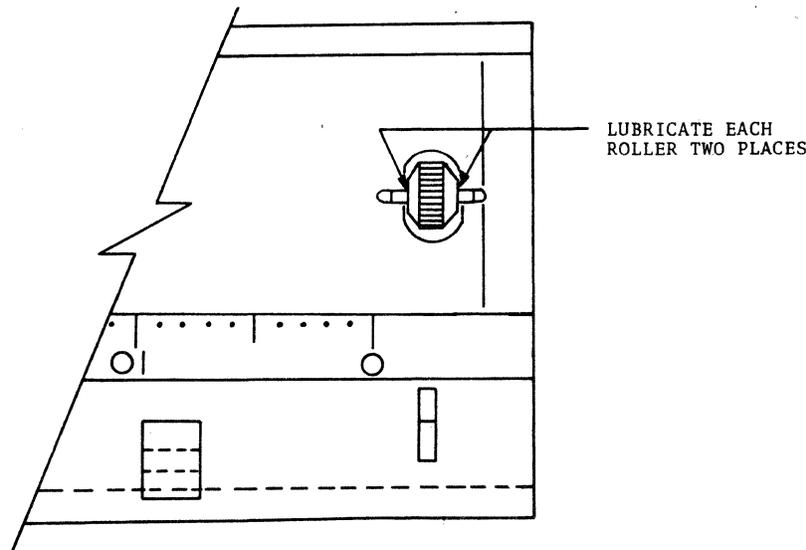
The approved lub material for this operation is Aerosol Dry Lubricant G.E. Part Number 44A417371 or FEL-PRO C-300 Aerosol Dry Film Lubricant\*.

Equip the lub container with a nozzle extension and direct the lubricant as shown in the drawing. When performing this operation, note the following points:

1. Isolate the roller area with a cloth.
2. Use one very short burst of lub material at each roller axis.
3. Work each roller until it's free.
4. Allow the lubricant carrier to dry.
5. Wipe away all excess lubricant and thoroughly clean the paper shield.

As a last resort, you may press the rollers out of the shield and lub each part separately. Allow the rollers to dry before replacing them in the shield.

If lubrication does not free the rollers, the plastic paper shield will have to be replaced.



\*FEL-PRO Co. 7450 N. McCormick Blvd., Skokie, Ill.

<b>PREPARED BY</b> M. E. Tutwiler	<b>ISSUED BY</b> R. A. Prudhomme	<b>DATE</b> 11/27/73	<b>SUPERSEDES ISSUE DATED</b>	<b>PAGE</b> 1 of 1
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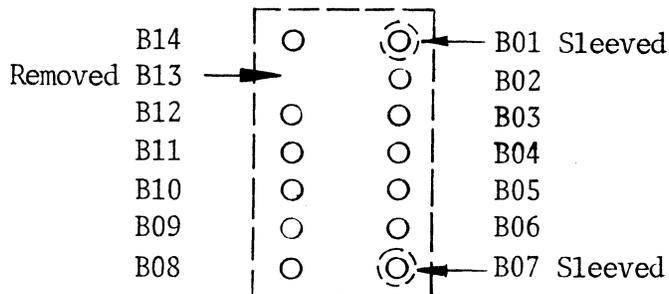
DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

TO:  GENERAL DISTRIBUTION	FILE Terminet 300 Printer Red Book Terminet 1200 Printer White Book	NO.  74-10.0
	SUBJECT MODIFICATION OF THE MOTHER BOARD POWC CONNECTION AND THE XFMR PLUG	

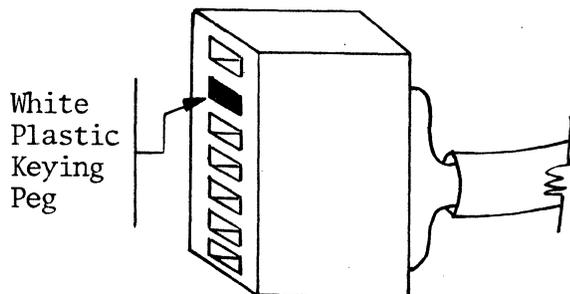
There has been a change made in the mating of the transformer plug and Mother Board POWC connector on Terminet Printers. This change supersedes any changes which have been disclosed in the past.

The POWC Mother Board connector (J10) and the XFMR plug (P10) are now being built so they will key on each other. The keying is as illustrated in the drawings below.

#### MODIFIED POWC MOTHER BOARD CONNECTOR (J10 Male Receptacle)



#### NEW XFMR PLUG (P10 Female Plug)



This change insures that the plug and the connector will only be mated properly and only with each other.

Should you have to replace the transformer in a Printer, the replacement part will have this new keyed plug. You will have to modify your Mother Board POWC connector to accept this keyed plug. Do this by removing pin B13 from J10. Do not remove the keying peg from the XFMR plug slot, however, for this would defeat the keying effect.

#### IMPORTANT NOTE

It is possible for some POWC plugs in the field to have pegs in slots B13 and B14 due to an earlier modification. Should you encounter this situation, DO NOT remove Mother Board pin B14. Remove the white plastic peg from plug slot B14 instead.

PREPARED BY M. E. Tutwiler	ISSUED BY W. J. Vance	DATE 5/15/74	SUPERSEDES ISSUE DATED 11/1/73	PAGE 1 of 1
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TO:  GENERAL DISTRIBUTION	FILE Terminet 300 Printer Service Book Terminet 1200 Printer Service Book	NO.  74-12.0
	SUBJECT FAULT ISOLATION OF Terminet 300 and 1200 PRINTERS WITH CURRENT INTERFACE OPTION	

Where a KSR or ASR Terminet Printer is connected to a computer or other data source by means of the four-wire current interface option, a need exists for easy isolation of system faults that are sensed as Interrupt indications on the Printer Control Panel. The test circuit shown in Figure 1 of this Service Advice should be used for such fault isolation.

CONNECTING THE PRINTER TO THE TEST CIRCUIT

1. Fabricate the test circuit terminal board shown in Figure 1.
2. Turn off Printer power.
3. Disconnect the Current Interface Cable spade lugs from the terminals to which they are presently connected.
4. Connect the Current Interface Cable spade lugs to the test circuit terminal board as shown in Figure 1 (note that the drain wire is the bare wire).
5. If the Printer contains a DATI/2 board, connect R1 via a clip lead to the appropriate test point shown in Note 1 of Figure 1.
6. If the Printer contains a DATI/3 board, R1 is not connected to anything.

The Printer is now connected so that any data sent out over the Current Interface Cable is returned to the Printer without going through the remote data source or the wiring connected to this source.

USING THE TEST CIRCUIT

1. Turn on Printer power.
2. Place INHIBIT switch in the PRINT position.
3. Press the ON LINE Pushbutton.
4. Type a line of data (the alphabet, both caps and lower case, and numerals 1 through 0).
5. Check CR and LF operation.
6. If the typed data is printed correctly on the Printer, there are no interrupts, and CR and LF work properly, the original problem is either in the remote data source or in the hard wiring between the remote data source and the Printer.

<b>PREPARED BY</b> R. K. Wilson	<b>ISSUED BY</b> W. J. Vance	<b>DATE</b> 7/25/74	<b>SUPERSEDES ISSUE DATED</b>	<b>PAGE</b> 1 of 3
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<b>TO:</b> GENERAL DISTRIBUTION	<b>FILE</b> TermiNet 300 Printer Service Book TermiNet 1200 Printer Service Book	<b>NO.</b> 74-12.0
	<b>SUBJECT</b> FAULT ISOLATION OF TermiNet 300 and 1200 PRINTERS WITH CURRENT INTERFACE OPTION	

7. If there is an interrupt during this test, if the printing is garbled, or if there are other obvious malfunctions, the original fault is probably in the Printer or in the Current Interface Cable. Continuity checking of the cable should further isolate the fault to the Printer or the cable.

The following concerning the use of this test circuit should be noted:

1. Disconnecting either of the two jumpers will initiate an interrupt condition (Beep tone and INTERRUPT lights).
2. With the test circuit installed as shown, data typed on the keyboard will print on the Printer, regardless of the INHIBIT switch position.
3. Check that there is no board plugged in the bustle MOD slot. A board in this slot, combined with the Current Interface Option normally will cause interrupts.
4. Disconnecting and then replacing either of the jumpers (when the Printer is on) may introduce noise spikes on the cable input line. This may cause the printing of random characters or parity error indication (diamond).
5. The jumper between the cable output and input leads may be replaced with a small resistor (approximately 20 ohms) to simulate line impedance if desired.
6. Going into LOCAL operation when using a DATI board may cause an interrupt. However, this is a problem associated with the SPCC board design (see 1/25/74 Baud Beat, item 74-1-10).

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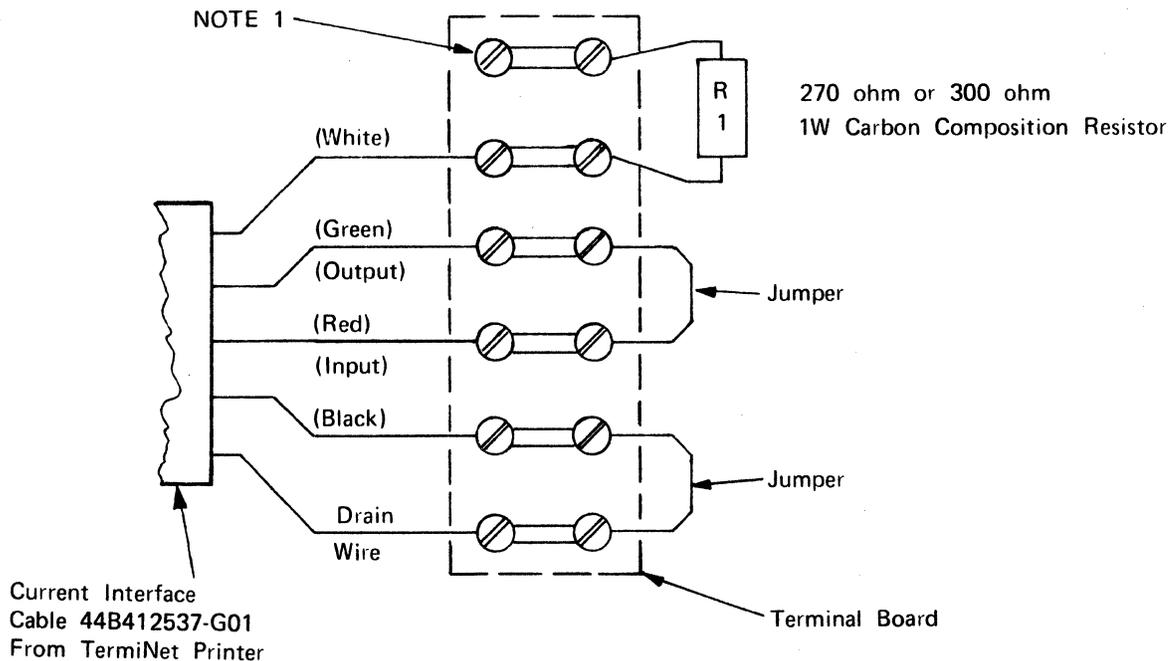
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NO. 74-12.0

SUBJECT FAULT ISOLATION OF Terminet 300 and 1200 PRINTERS WITH CURRENT INTERFACE OPTION

FIGURE 1

### TEST CIRCUIT - CURRENT INTERFACE 4-WIRE SYSTEM



#### NOTES

- This terminal board point should be connected as follows:

	Terminet 300	Terminet 1200
IF DATI/2 BD. USED	TP4 ON LMPC (+15.6V)	TP8 ON HPRB (+15.6V)
IF DATI/3 BD. USED	NO CONNECTION	NO CONNECTION

- Run tests with Inhibit Switch in the "PRINT" position.

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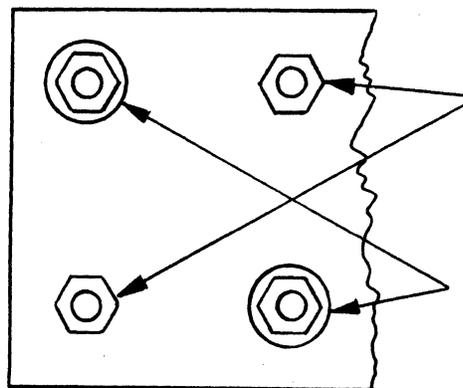
**FILE**  
Terminet 300 Printer Service Book  
Terminet 1200 Printer Service Book

**SUBJECT**  
MOTHER BOARD GROUND CONNECTIONS

**NO.**  
74-13.0

On the Terminet 300 and 1200 Printer, the left hand side of the Mother Board (i.e., side containing Reader and Punch Connectors) is fastened to a metal bracket by means of four screws and nuts. The upper left and lower right nuts should have fiber insulating washers under the nuts. The other two nuts, which are used to connect the punch and reader drain wire connections to chassis ground should not have insulating washers under them.

L.H. end of Mother Board as viewed from front of Printer.



There should not be insulating washers here.

There should be insulating washers here.

Some Terminet 300 and 1200 Printers have been assembled with insulating washers under all four nuts. In these instances, the drain wires may not be properly grounded with the result that the punch and reader circuitry may malfunction due to electrostatic or electromagnetic radiation in the vicinity of the Printer or line voltage transients.

To prevent such problems on Printers having washers erroneously installed under the upper right and lower left nuts (see sketch above), solder a jumper of No. 22AWG solid wire from the end of each of these two screws to the Mother Board printed circuit pad directly under the washer. Keep the jumpers as short as possible (not over one inch each) and make sure they do not contact any of the adjacent circuits. Follow the procedure of GEH-2185, pages 5-10 and 5-11 for disassembling the Main Frame and Bustle Frame to gain access to the screws on the Mother Board.

As an alternative to soldering jumpers, you may "wring" off the heads of the upper right hand and lower left hand screws (the nuts are locked on with solder) with a screwdriver and wrench or nut driver, being very careful not to damage the Mother Board or the Reader and Punch connectors. Remove the fiber washers and replace the hardware assembly as shown in the following sketch:

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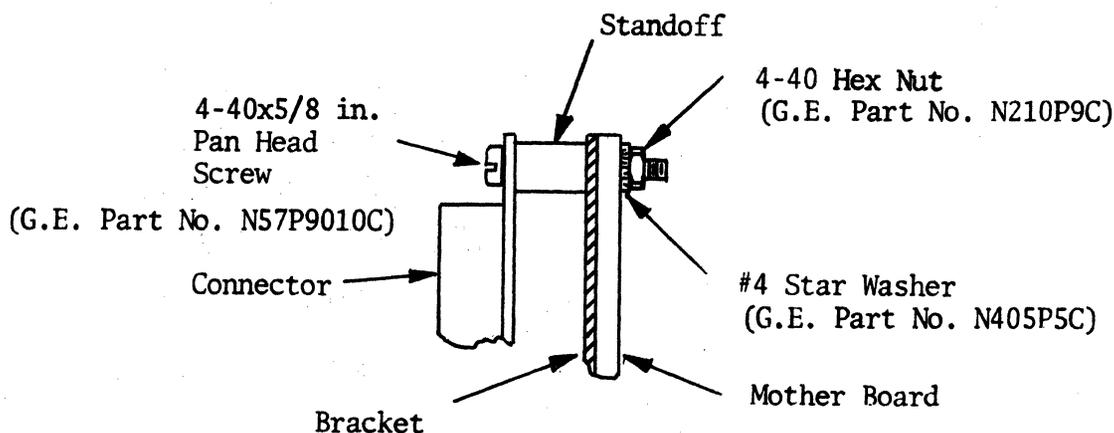
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	SUBJECT MOTHER BOARD GROUND CONNECTIONS	



Cover the nut and screw end with solder and allow solder to flow on to the printed circuit pad under the washer. Make sure the solder does not come in contact with any other printed circuit.

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TO:  GENERAL DISTRIBUTION	FILE TermiNet Accessory Service Book	NO. 74-14.0
	SUBJECT TCA FORWARD MOTOR SPEED ADJUSTMENT	

Whenever the TMC or the TUC PCB's are replaced, the forward motor speed must be adjusted so that tape speed is within specifications. The motor speed can now be adjusted in the field by using a pulse frequency counter and a special Test Tape (Part No. 44A418053-001, from the General Electric Company, DCPD, Waynesboro, Virginia 22980). It is no longer necessary to return defective TCA's to the factory for repair.

### TEST PREPARATION

#### CAUTION

Ensure that all TCA functions are operating properly except for motor/speed timing. The test tape is not to be used for debugging problems. Otherwise, the test tape may be damaged. Refer to GEK-35981 for service information.

1. Ensure that jumpers on CLCC PCB are installed for 30 and 120 cps.
  - a. Rate switch medium position (30 cps) cup 6 to cup 2.
  - b. Rate switch high position (120 cps) cup 5 to cup 4
2. Check the jumpers on the TRP PCB so that they correspond to the CLCC PCB.

TRP/1 and TRP/2

3J In, 2J Out 120 cps when rate switch is in high position.  
2J and 3J must not be installed at the same time.

TRP/3

No jumpers on TRP/3 for rate selection. 120 cps is always the high rate switch position; therefore, CLCC must be strapped as in Step 1.

3. Attach input lead from a pulse frequency counter (example: Hewlett-Packard 5300A) to test point one (TP1) on the TRP PCB (ST Pulse). Allow counter to cycle several times before making any adjustments when setting Forward motor speed.
4. Remove TCA enclosure.

#### WARNING

117V AC or 230V AC is present inside the chassis.

5. Install a spare blank (not test tape) cassette, and close tape deck door.

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	<b>SUBJECT</b> TCA FORWARD MOTOR SPEED ADJUSTMENT	

6. Press ADVANCE pushbutton and check for forward motor creep (refer to Balance potentiometer Adjustment in GEK-35981, Section 5).
7. Press and hold ADVANCE pushbutton for 30 seconds to bring forward motor up to operating temperature.
8. Press REWIND pushbutton. Tape will rewind to BOT to bring rewind motor up to operating temperature.
9. Then press READ pushbutton with Printer RATE switch set at 120 cps. Allow tape to run until automatic stop at end of tape. DO NOT REWIND. Remove cassette.

### TEST PROCEDURE

1. Install Test Tape cassette (44A418053-001).

#### NOTE

Make sure cassette is Rewound to BOT; however, if it is not, do not press REWIND or ADVANCE pushbuttons at this point to rewind the tape since this will excessively heat one motor and change the ST frequency at TP1 on the TRP PCB. One way to rewind tape, if only one TCA is available, is to turn tape around and press READ.

#### WARNING

Use an insulated screwdriver (example: fibre screwdriver) when adjusting any potentiometers. This will prevent any accidental shorting on the PCB's.

2. Set the RATE switch at 30 cps.
3. Press READ and adjust Potentiometer P1 (P1 is the right potentiometer when looking at the component side of PCB) on the TUC for:

A1, A1A, A2, and A3 models      1598 ± 15 counts

#### NOTE

Only ST Pulses are recorded on the Test Tape. Any intermittent noise getting into the system may cause the interrupt indicator to light or be interpreted as a character. Improper tape stacking in the cassette can cause tape speed to vary. If this happens, rewind the tape a few times in both directions to correct the stacking.

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	SUBJECT TCA FORWARD MOTOR SPEED ADJUSTMENT	

4. Set Printer RATE switch at 120 cps and adjust potentiometer P2 (P2 is the left potentiometer when looking at the component side of PCB) on TUC PCB for:
  - A1 model      3827 + 15 counts
  - A1A, A2, and A3 models    4157 + 15 counts
5. Allow Test Tape to run until approximately two-thirds the way through. Then recheck the tape speed (Steps 3 and 4). If not correct at this point, adjust balance potentiometer P1 on TMC PCB.
6. Recheck forward motor creep adjustment as in Step 6 of Test Preparation.
7. If the TMC PCB was adjusted in Step 5, return to Step 1 of Test Procedure.
8. If you are unable to adjust one or more speeds (typically 120 cps), check for +15V output at pin 11 or M on the TPS PCB. Voltage should be +15 + .4V.

If out of tolerance, replace TPS PCB.

NOTE

The TPS PCB could be loaded by the TUC or the TMC PCB's.  
 Consider possibility of other problems in these PCB's before changing the TPS PCB.

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GENERAL DISTRIBUTION	FILE Terminet Printer Accessory Book	NO. 74-17.0
SUBJECT INSTRUCTIONS FOR REPLACING AC REELERS WITH NEW DC REELERS - LEFT & RIGHT; ADJUSTING & SERVICING DC REELERS		

The existing AC Reeler Assemblies 44B417103-001 and 002 have been superseded by new, more reliable DC reeler assemblies. The new reelers employ a simple, thoroughly tested proportional servo to move the tape and control the positioning the tape dancer arms. In actual DC Reeler usage, there is very little motion of these arms. This Service Advice contains the necessary instructions for replacing the AC Reelers with DC Reelers at user locations. NOTE: All steps in the procedure apply to replacing AC Reelers with DC Reelers; Steps 19 - 31 and note on page 5 applies to servicing and adjusting existing DC Reelers.

### MATERIAL REQUIRED

- 1 - DC Reeler, 44B417117-001 (Left)
- 1 - DC Reeler, 44B417117-002 (Right)
- 1 - Cable Assembly, 44A411651-G01
- 3 - Wire Nuts, 44A319837-003
- Shim Material (See Step 20)
- Two rubberbands approximately 4" long
- 1 - Resistor, K8622212D22

The Resistor, Reelers, Cable Assembly, and Wire Nuts may be obtained from Parts & Administration, General Electric Company, Data Communication Products Department, Waynesboro, Virginia 22980, by means of a no-charge purchase order.

### TOOLS REQUIRED

- Diagonal Cutters
- Wire Strippers
- 1/4" Nut Driver--Xcelite 99-8 with 99-1 handle, or equivalent
- 5/16" Nut Driver--Xcelite 99-10 with #70 extension arm and 99-1 handle, or equivalent
- 1/4" Crescent Wrench
- Allen-head Screwdriver--Xcelite 99-21 with 99-1 handle, or equivalent
- Allen-head Screwdriver--Xcelite 99-764 with 99-1 handle, or equivalent
- Allen-head Screwdriver--Xcelite 99-20, or equivalent
- Phillips-head Screwdriver--Xcelite 99-821 with 99-1 handle, or equivalent
- Miltimeter--Triplett Model 310-C, or equivalent

### PROCEDURE

1. Turn desk power off by means of kneehole switch or by removing Desk Power plug from wall receptacle.
2. Remove Reader drawer mechanism perforated cover and wide "U" shaped brackets on top of Reelers using 1/4" nut driver.
3. Disconnect all wires from terminal boards TB1 and TB2 on rear of AC Reeler assemblies. Remove the two screws that fasten the long angle bracket to the rear of the two AC Reeler assemblies.

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4. Remove the AC Reeler cable harness, including the connections to J21. The connections to J21 (two orange wires, one green wire, and one grey wire--See Figure 1) may be cut with diagonal cutters and taped up. Be careful not to cut any of the wires in the cable going to the Tape Reader.
5. Remove the Reeler power cord from the Reader Drawer.
6. Using the #21 Allen-head screwdriver, loosen the Allen-head screws holding the AC Reeler Dancer Arms in place and remove the Dancer Arms.
7. Using the 5/16" nut driver, remove the three nuts and washers holding the AC Reeler assemblies to the front of the Reader drawer. The extension arm (e.g., Xcelite #70 or equivalent) will be required to get at the bottom nut holding each Reeler. Save this hardware to use in Step 10 below.
8. Remove both AC Reeler assemblies.
9. Using the 1/4" nut driver or crescent wrench and the #764 Allen screwdriver, loosen the screws and nuts holding the Dancer Arms on the shafts of the two DC Reelers and remove the arms. Make sure that the springs connected to the Dancer Arm--servo potentiometer coupling do not become disengaged.
10. Insert the DC Reelers in the drawers--part 001 on the left and part 002 on the right--with the three Reeler mounting holes over the three mounting studs. Using the hardware saved from Step 7, fasten the DC Reelers to the Reader Drawer with the 5/16" nut driver and extension arm.
11. Connect P2A on the Right DC Reeler to J2A in the Left Reeler, P2B on the Left Reeler to J2B on the Right Reeler, and P1 on the Right Reeler to J1 on the Cable Assembly, 44A411651-G01 as shown in Figure 1.
12. Referring to Figure 1, cut the 26V, 0V, and -15V leads coming out of RDR board connector J20 approximately 1 1/2" from the connector and strip approximately 1/2" of insulation from both ends of the cut wires.
13. Using the three wire nuts, 44A319837-003, splice the leads of cable assembly, 44A411651-G01 to the leads cut and stripped in Step 12 as shown in Figure 1.
14. Remove the Desk Power Supply from the rear of the Desk by unplugging the Power Supply power cord and removing the four wing screws that bolt the Supply to the Desk.
15. Using the 1/4" nut driver, remove the Power Supply's perforated cover.

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16. Check whether the Power Supply contains a DPS/1 or 2 board. If it does, replace 3R on the DPS board with a K8622212D22 (22 ohm, 10W resistor). If it contains a DPS/3 board, proceed to Step 17.
17. Replace the Power Supply cover and re-install the Power Supply in the Desk.  
CAUTION: Do not turn on Desk Power unless 3R on DPS is 22 ohm.
18. Place the Dancer Arms on the shafts of the two DC Reelers.
19. Using the #764 Allen Screwdriver and the 1/4" crescent wrench, tighten the nuts on the Dancer Arms just enough to cause the couplings between the Dancer Arm shafts and the servo potentiometers to turn when the Dancer Arms are turned.
20. Loop a rubber band over the ends (i.e., the surfaces used to guide the tape) of the two Dancer Arms so that the Dancer Arms are held against their respective "taut tape" stops (i.e., clockwise stop on the right reeler, counterclockwise stop on the left reeler). Insert approximately 1/16" of shim material (four thicknesses of match book covers will do) between the arms and the stops.
21. Insert a #20 Allen-head screwdriver in the set screw of the right reeler dancer arm-servo potentiometer coupling. Use the wrench to rotate the coupling slowly clockwise (as viewed from the front of the Reader Drawer) until the TAUT TAPE- TAPE OUT micro-switch just closes, as indicated by an audible "click", with the dancer arm separated from the taut tape stop by the shims inserted in Step 20.
22. With the coupling held by means of the Allen wrench in the position obtained in Step 20, use the 1/4" crescent wrench and the #764 Allen wrench to tighten the nut and screw holding the right dancer arm on its shaft. Note that it should be possible to hold the wrench in place with your knee, but if this cannot be accomplished, assistance will be required for performing this step.
23. Now rotate the right dancer arm slowly in the counterclockwise position. Verify that the TAUT TAPE-TAPE OUT switch opens (as indicated by an audible "click", and then closes again when the arm is approximately 1/16" from the counterclockwise or "tape out" stop. If the switch does not close, rotate the dancer arm clockwise again to make sure the switch still closes when the dancer arm is approximately 1/16" from the taut tape stop. If the switch closes when the spacing is more than 1/16", the dancer arm has slipped on its shaft and Step 22 must be repeated. If the dancer arm has not slipped, loosen the two Phillips Head screws holding the microswitch in place and raise the switch slightly. Then repeat Steps 22 and 23.
24. Repeat Steps 21, 22, and 23 with the left Reeler Dancer Arm, except that in Step 21 the left coupling is rotated counterclockwise and in Step 23, it is rotated clockwise.

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25. Remove the rubber band and shim material applied in Step 20 and rotate each dancer arm slowly back and forth several times between its respective stops. Check that the respective micro-switches always close as the arms approach to within approximately 1/16" of the stops and open as the arms are moved away from the stops. Readjust per Steps 21-24 if necessary.
26. Close the Desk knee-hole switch or replace the power plug in the receptacle and check that the voltage across zener diode, CR1, on each of the Reeler printed circuit boards is within the range 4.5-5.5V DC and that it does not vary more than approximately 0.2V DC as the dancer arms are rotated. A voltage much higher or lower than 4.5-5.5V DC indicates either (a) a defective zener diode or (b) incorrect wiring to the Reeler (check connections made in Step 13).
27. Referring to Figure 2, rotate each dancer arm from one stop to the other and make a mark on the reader drawer under dancer arm when it is up against each stop. Determine the mid-point between each of these pairs of marks and make a third mark to indicate the mid-point of the arm travel.
28. Now loop rubber bands from the Reader tape guides over the ends of the dancer arms. The arms should come to rest somewhere in the vicinity of the mid-point marks made in Step 27. Their exact position is not important as long as both Reeler microswitches are open.
29. Manually move the right dancer arm back and forth past its midpoint mark. The right reeler servo motor should slow down and stop just before the midpoint mark is reached and then gradually speed up again in the opposite direction as the arm passes by the midpoint mark. It should also stop when the arm is against each stop. If the servo motor does not stop at the midpoint mark, loosen the two Phillips head screws holding the servo potentiometer in place. Then while holding the dancer arm on the midpoint mark, slowly rotate the potentiometer until the motor stops rotating. Tighten the screws, making sure the round part of the washers under these screws are pressing on the potentiometer flange.
30. Repeat Step 29 for the left dancer arm and Reeler motor.
31. Place reels on both reelers, wind about 25 feet of a known good tape on to the left reeler. This tape should contain READER OFF code at both ends and an ESCO (reader reverse) code between the ends. Run this tape back and forth through the reader several times at all rates available on the Printer and check Reeler operation. Dancer Arms should not bind and there should be very little motion of them when the tape is running through the Reader.
32. Cord tie cable assembly 44A411651-G01 to existing cable in five places.
33. Replace perforated cover in the Reader drawer.

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### NOTE

After tape has been threaded through the Reader and before the reader is turned on, both Reeler dancer arms should be gently pushed toward the Reader head until the servo motors "catch" and take up the tape slack. If this is not done, tape will spill on the floor as soon as the Reader is turned on.

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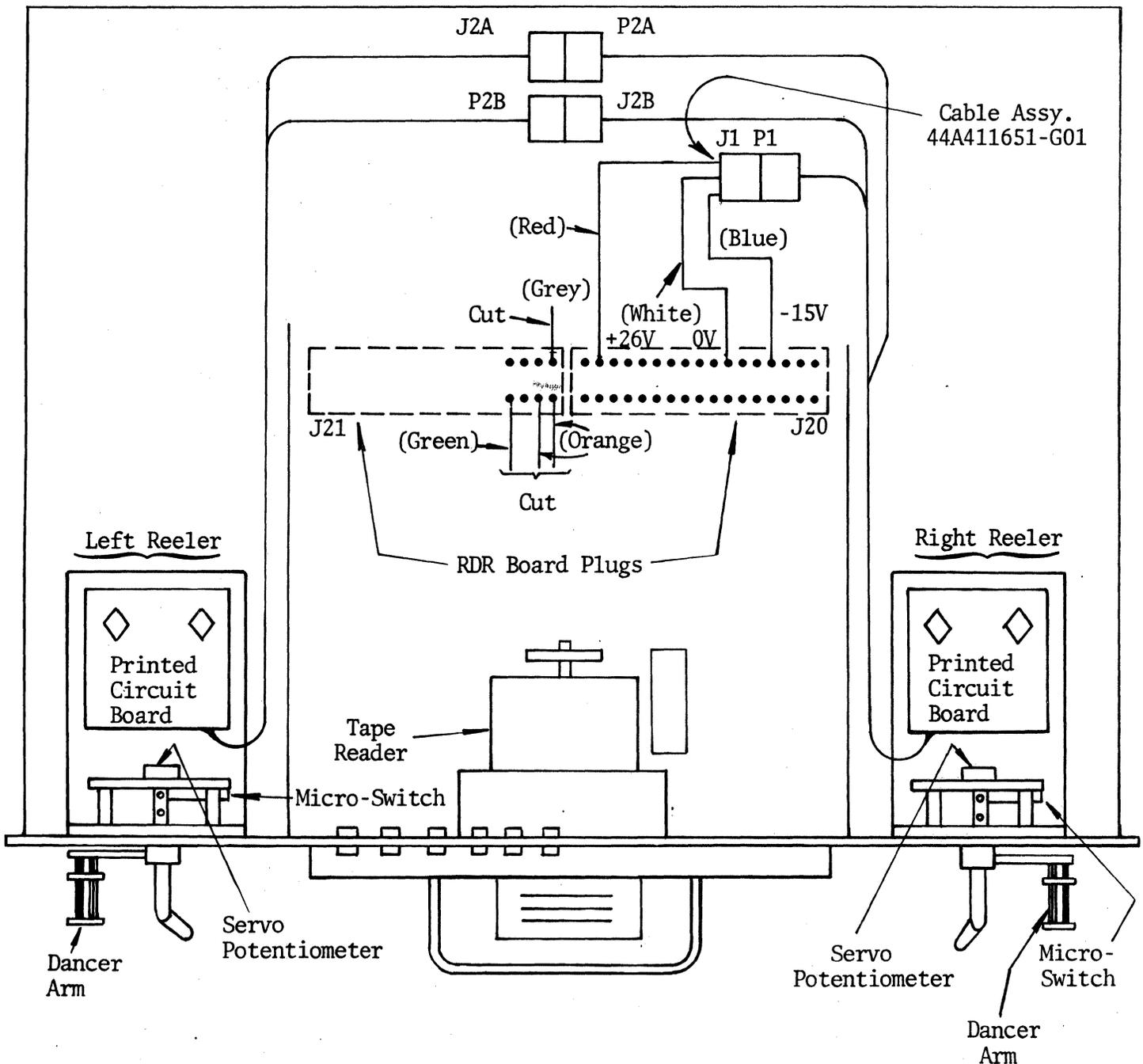
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Figure 1

Reader Drawer Top View (Not to Scale) and Connection Diagram



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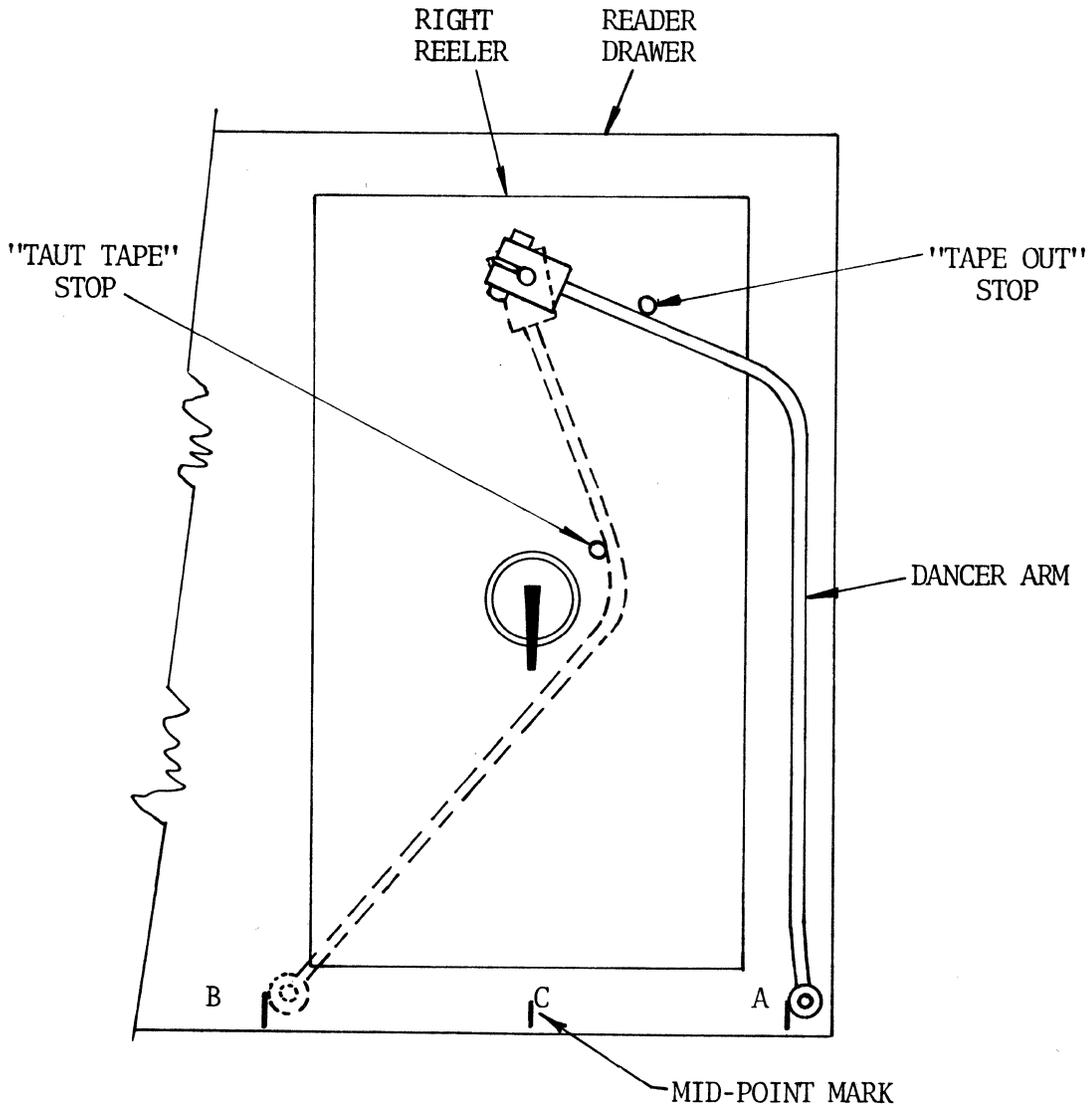
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Figure 2  
 Finding Midpoint of Dancer Arm Travel-Right Reeler  
 (Left Reeler Similar)



$AC \approx CB \approx 1/2 AB$

**NOTE:** Point "A" may actually lie off Reader Drawer Front Surface. However, distance AB can be measured and the distance CB computed. + 1/8" accuracy adequate for determination of point "C".

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TO: GENERAL DISTRIBUTION	FILE TermiNet 300 Printer Service Book TermiNet 1200 Printer Service Book	NO. 74-18.0
	SUBJECT LINE FEED SOLENOID FIELD REPAIR	

The advisability of having the field replace line feed solenoid arms when they fail rather than replacing the whole solenoid assembly has been raised.

This is definitely not a recommended practice for the following reasons: The air gaps between the frame and arm, and the pole piece and the arm are precise settings done in conjunction with the setting of the angle of the arm while monitoring the pull-in current.

If either the air gaps or the pull-in current are not properly set, the arm spring will experience excessive stress which will cause early failure and additional service calls.

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W. J. Vance

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**PAGE**

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# Terminet<sup>®</sup> DATA COMMUNICATION PRODUCTS

## SERVICE ADVICE

**GENERAL ELECTRIC**

DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

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TO:

GENERAL DISTRIBUTION

FILE Terminet 300 Printer Service Book NO.  
Terminet 1200 Printer Service Book 74-2.0A

SUBJECT NEW DATASET CABLE

This Service Advice is intended to introduce a new Dataset Cable. This cable interfaces between a Terminet RO Printer and a 202C or 202D Dataset.

This new cable's part number is 44B412536-G02 and its cost is \$69.23. It can be ordered from DCPD Order Entry in Waynesboro.

The cable connects the Dataset CF (Carrier Detector) signal to the Printer CB (Clear to Send) circuit. This connection allows the use of Automatic Motor Control and Status Options on the DATC board in RO Printers. The Printer boards should be strapped so this signal can light the READY light, also the Automatic Motor Control Option strapping should be accomplished. Strapping should be per the following table for motor control and status monitor options:

PRINTER BOARD	JUMPER	
	IN	OUT
DATC/2	1J, 4J, 5J, 6J	2J, 3J
202/2	3J	1J, 2J, 4J

This strapping insures the reverse channel transmitter will be on when Printer status is good. Bad status, then, will turn the reverse channel transmitter off. The Automatic Motor Control Option will turn the motor on as soon as carrier is detected by the Dataset. The false call and loss of carrier disconnect features of the 202/2 board will function normally.

All new RO Printers equipped with a 202/2 interface board will be shipped with the new cable. This new cable, however, cannot be used with SR and KSR Printers. They will still use the 44B412536-G01 cable. SR and KSR Printers cannot employ Automatic Motor Control or Status Options, while RO Printers cannot employ line control.

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<b>TO:</b> GENERAL DISTRIBUTION	<b>FILE</b> Terminet 300 Printer Service Book Terminet 1200 Printer Service Book Terminet Accessories Service Book	<b>NO.</b> 75-1.0
	<b>SUBJECT</b> WARPED VTFF PROGRAMMING DISCS	

There have been reports of warped VTFF Programming Discs slipping on the VTFF mechanism. Normally a warped disc will not cause a problem on a properly adjusted VTFF mechanism, but if the degree of warpage allows the disc to lift free from the disc key post, the disc will slip.

### NOTE

Refer to GEH-2185 (pages 3-18, 3-19, 5-31, and 5-32) or GEK-36105 (pages 3-13, 3-14, 5-25, and 5-26) for illustrations depicting the VTFF mechanism and for VTFF mechanism adjustment procedures.

If a warped disc is slipping, press a non-metallic washer on the disc key post after the disc has been installed. The washer should have a friction fit sufficient to retain the disc on the disc key post. The washer should be non-metallic in case it comes loose or is dropped in the Printer case.

A rigid non-metallic washer with an inner hole diameter of 0.120 to 0.125 inches can be used. If they are not available at your location, a reasonable quantity of fiber washers, part number 998A408-008 can be obtained at no cost from:

General Electric Company  
DCPD  
Customer Service - Parts  
General Electric Drive  
Waynesboro, Virginia 22980

Dial Comm: 8\*272-1138

<b>PREPARED BY</b> J. Lanier/ R. Wilson	<b>ISSUED BY</b> W. J. Vance	<b>DATE</b> 2/10/75	<b>SUPERSEDES ISSUE DATED</b>	<b>PAGE</b> 1 of 1
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<b>TO:</b> GENERAL DISTRIBUTION	<b>FILE</b> TermiNet Accessories Service Book	<b>NO.</b> 75-2.0
	<b>SUBJECT</b> SPLICES FOR PAPER TAPE	

TermiNet customers using paper tape equipment may have need for tape splices for joining the ends of tape sections together, for forming loop tapes, or for mending damaged tapes.

~~It is recommended that~~ opaque mylar splices be used in such applications. Mylar splices normally have a life greatly exceeding that of paper splices. An opaque splice also reduces the possibility of parity or reading errors being generated where two tape ends are butted together.

A suggested splice is:

Opaque Mylar Patch, Part No. DL-113M0

Manufactured by: Data Link Corporation  
7330 Conway Court  
P.O. Box 2792  
San Diego, California 92112

Note that the suggested splice has all eight tracks plus sprocket holes punched in it. Other splices are available from the same vendor with only sprocket holes; special hole patterns may be ordered.

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TO:  GENERAL DISTRIBUTION	FILE Terminet Printer Accessory Service Book	NO. 75-3.0
	SUBJECT MODIFYING PAPER TAPE READERS FOR USE IN DESK REELER DRAWERS	

A few of the paper tape readers, 44A417823-002, available as replacement parts may not have the two small holes available in the front mounting plate for mounting the tape guides associated with the reelers option. If it is necessary to use a Reader without these holes as a replacement for a reader in a Reeler drawer, the holes should be drilled at the locations shown in Figure 1 of this Service Advice. Use either a No. 6 or 13/64" twist drill. These holes need not be drilled on Readers to be used on Pedestal ASR's or on desks that do not have Reelers.

### CAUTION

Before drilling holes in the Reader mounting plate, cover the Reader head, lamp, and sprocket wheel with a cloth to prevent damage to these parts from chips or a broken drill. The mounting plate should be firmly clamped in a vise during the drilling operation to prevent shock and vibration damage to the Reader. Make sure the Reader lens, photocell cover, tape guide, and terminal board are free of chips and dirt before mounting the Reader in the drawer.

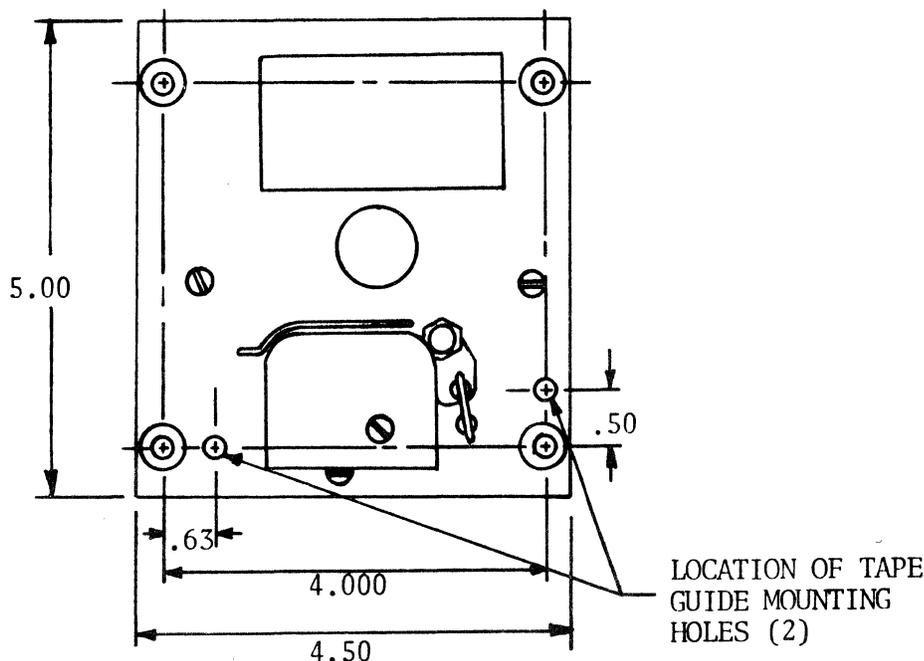


Figure 1.

### LOCATION INFORMATION FOR DRILLING TAPE GUIDE MOUNTING HOLES

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DATA COMMUNICATION PRODUCTS DEPARTMENT  
WAYNESBORO, VA. 22980 --- TELEPHONE 703-942-8161

TO:  GENERAL DISTRIBUTION	FILE Terminet 300 Printer Service Book Terminet 1200 Printer Service Book Terminet Accessory Service Book	NO.  75-6.0
	SUBJECT CLEANING PRINTED CIRCUIT BOARDS AND CONNECTORS IN Terminet 300, 1200 & ACCESSORY	

When a printed circuit board (PCB) is removed from the Terminet 300 or 1200 Printer, TCA, or Paper Tape Equipment, the PCB finger contacts and the corresponding connector should be cleaned before reinserting the PCB. This is particularly important with a PCB that is suspected of being intermittently defective. The defect could be a poor connection because of foreign matter on the finger contacts or related connector. Before doing any other troubleshooting, a good service practice would be to clean the finger contacts and related connector of a suspected PCB. Also, a new PCB should be cleaned before installing.

### CAUTION

- a. Do not use an eraser or an abrasive material on the PCB fingers or connectors; an abrasive will remove the gold plating from the contacts which will result in a poor contact surface. Use only the approved cleaning solvents listed at the end of this service advice.
- b. Do not clean the PCB's and connectors of the Terminet 30 and 120 Printers using the following procedures. PCB's for these Printers have a lubricant on their contacts to assist in inserting in their connectors. A cleaning solvent will remove this lubricant.

### CLEANING PCB FINGER CONTACTS

1. Apply cleaning solvent to the finger contacts; leave on for at least 5 seconds.
2. Rub contacts with a soft, lint free cloth until contacts are dry.
3. Repeat steps 1 and 2 until all foreign matter is removed from the contacts.

### CAUTION

Avoid contacting the PCB components with the solvent.

### CLEANING CONNECTORS

1. Remove PCB.
2. Wrap a soft lint-free cloth over a strip of .031" to .062" thick by 0.75" wide material (cardboard, wood, etc.). Total thickness of cloth and material should not exceed .070".
3. Spray solvent in connector slot.
4. Spray solvent on cloth and again in the connector slot. Work quickly as the solvent evaporates rapidly.

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## SERVICE ADVICE

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TO:  GENERAL DISTRIBUTION	FILE Terminet 300 Printer Service Book Terminet 1200 Printer Service Book Terminet Accessory Service Book	NO.  75-6.0
	SUBJECT CLEANING PRINTED CIRCUIT BOARDS AND CONNECTORS IN Terminet 300, 1200, & ACCESSORY	

5. Insert cloth wrapped strip in the connector slot and move in and out and vertically as much as possible.
6. Repeat steps 4 and 5 until cloth comes out clean.
7. Spray the connector slot once more and allow the solvent to evaporate.
8. Reinsert PCB.

### APPROVED CLEANING SOLVENTS

The following are the only approved cleaning solvents:

- LPS Contact Cleaner  
LPS Research Laboratories  
Los Angeles, California
- MS-230 Contact RE NU  
Miller - Stephenson Chemical Company, Inc.  
Danbury, Connecticut
- Contact - Kleen  
Chemtronics Inc.  
Brooklyn, New York

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