Wang Laboratories, Inc., announces the Model 2273 Band Printer -- a medium-duty, solid character impact printer. Two models of the printer are available: the Model 2273-1, which provides nominal throughput of 250 lines per minute, and the Model 2273-2, which provides nominal throughput of 600 lines per minute.

Two serial versions of the band printer are available for the VS: the Model 2273V-1S, and the Model 2273V-2S. The Model 2273V-1S provides nominal throughput of 250 lines per minute, and the Model 2273V-2S privides nominal throughput of 600 lines per minute.

The Model 2273 provides high-quality printed output and a number of operator convenience features. The printer is both inexpensive and extremely versatile -- the customer can use the Model 2273 for a variety of different printing applications. The band printing technology utilized by the Model 2273 allows performance and print quality comparable to many medium- or high-speed impact printers at a much lower cost.

[handwritten] See Bill

[handwritten] Domestic & International bands

[handwritten] ✳ The speed of this product is based on 64 Char. band @ 132 Chars. Per line.

The Model 2273 is one of the most versatile printers available anywhere -- for any price. The reasons why are explained below.

OPERATOR-CHANGEABLE BANDS

The character set is contained on a steel band which can be easily removed and replaced by the operator. Bands are inexpensive, and Wang offers a complete library of bands designed to meet both domestic and international requirements. Thus, customers can easily build a library of character sets and typefaces which meets a wide range of printing requirements.

Character sets, in different typefaces, containing 48-, 64-, or 96-characters are available. PROMs are used to tell the printer the exact location of the characters on the band. Different PROMs are used for bands containing 48-, 64-, and 96-character sets -- bands must be used with the corresponding PROM. The Model 2273 can contain up to three unique PROMs.

PRINT SPEED

The Model 2273-1 prints a nominal 250 lines per minute, while the Model 2273-2 prints a nominal 600 lines per minute. The printer uses a solid-character impact printing technique, producing high quality output at medium and high speeds.

Characters are sequenced on the removable band in a pattern to maximize print speed (most commonly used characters are replicated on the band). The character sequences and number of replications vary between character set sizes. Print rates are a function of character pitch, the number of times characters are repeated on the band, and the character content of the lines to be printed. All line per minute speeds therefore vary from particular band to band. The following table depicts nominal printing speeds for each category of print bands.

Character band	2273-1	2273-2
48	300 lpm	630 lpm
64	250 lpm	600 lpm
96	175 lpm	450 lpm

EASE OF OPERATION

Diagnostic capabilities

The printer automatically performs a variety of diagnostics to check for error conditions, and a TEST switch allows the operator to print diagnostic test patterns while the printer is offline. In either case, any error detected by the printer is indicated on an alphanumeric STATUS display. The user can quickly determine whether the problem is operator-correctable or requires a call to Customer Engineering.

Controls and Indicators

The following controls and indicators make the Model 2273 easy to operate, and improve printer versatility:

- STATUS indicator lamp
- ALARM/CLEAR lamp
- ON/OFF LINE lamp
- Power On lamp
- PAPER STEP control
- TOP OF FORM control
- PHASE control
- LINES (6 or 8)
- TEST control
- COPIES control
- Forms Length Selector Switch

FORMS HANDLING AND MULTIPLE-COPY PRINTING CAPABILITIES

Special forms printing can be controlled manually by the Forms Length Selector switch (FLS), or by the Vertical Format Unit (VFU). The VFU is loaded under software control, or optionally from 12-channel paper tape.* The FLS controls page length only; in addition to controlling page length, the VFU provides rapid vertical tabbing under software control.

The impact printing technique used by the Model 2273 enables it to produce clear output on multi-part forms consisting of as many as five copies, plus original. The COPIES control is used in multi-part printing applications -- it regulates printer impact intensity for multiple-copy forms.

* Optional at extra cost.

PRODUCT POSITIONING

The 2273 series provides the ideal printing solution in those systems requiring high-quality, high-volume, solid character printing. The Model 2273 fits well in the "system" printer position in multi-user configurations. It is ideal for generating large reports or ledgers which would be too time consuming to print on slower matrix printers. The speed of the Model 2273 also allows it to provide the performance required in distributed data processing environments in which telecommunications is involved. The printer is designed for ease of use, and requires minimal operator attention. A tapeless carriage and automatic recognition of different bands reduce the chance of operator error.

In addition to incorporating features which meet industry standards, this printer also offers the flexibility found in slower character printers with interchangeable character sets and the speed usually found in chain or train impact printers. The changeable bands will be especially attractive to large international companies.

The 2273 series fills the gap between our current character per second matrix printers and the Model 2263 Chain Printer in both price and performance. The following chart lists comparable printers offered by some significant competitors. It is obvious that the Model 2273 provides Wang with a definite competitive edge.

COMPETITIVE CHART
TO BE ADDED

FEATURES	BENEFITS
• Band printing technology	• The solid character impact printing technique results in good print quality.
• Operator changeable bands	• Offers the user exceptional versatility in selection of character sets and typefaces.
• Alphanumeric STATUS display	• Minimizes unnecessary service calls by indicating printer status and flagging operator correctable conditions.
• Control panel	• Provides powerful diagnostic capabilities and permits easy access and simplicity of operation.
• TEST switch	• Allows the operator to print test patterns offline, for diagnostic and forms alignment purposes.
• 250 or 500 lines per minute	• Fast printout. (Print rates vary among the character bands which are offered.)
• Microprocessor-controlled printer	• Allows overlap of printing with reception of output from CPU, resulting in increased throughput and higher system performance.
• Deselection of printer ~~without loss of text~~	• Permits printer adjustments without loss of text.

• Domestic and foreign language character sets	• Bands are available in English and other selected languages.
• Small and compact printer	• Takes less space, and is extremely attractive.
• Reliability	• The band printer technology is proven to be extremely reliable, resulting in less down-time, and few service problems.
• VFU	• The software-controlled VFU eliminates the need for paper carriage tape, and greatly diminishes the possibility of operator error.
• Ease of operation	• The printer is easy to operate -- little time is needed to train the operator.

Band Description

The character set is inscribed on a closed-loop steel band -- character sets containing 48-, 64-, and 96-characters are available. The following chart describes the character content of the different character sets:

Character Content	Character Set Sizes		
	48	64	96
Numerics	10	10	10
Uppercase Alpha	26	26	26
Special Symbols	12	28	34
Lowercase Alpha			26

Characters

48-character set

64-character set

96-character set

The characters are sequenced on the band in a pattern designed to maximize print speed, and most commonly used characters are replicated on the band. A PROM is used to tell the printer the exact location of the character on the band. When a band is replaced with a band with a different character set, the printer automatically selects the corresponding PROM.

Print rates vary among the character bands offered. This difference in print rates is a function of character pitch, the number of times the most frequently used characters are repeated on the band, and the character content of the lines to be printed. The bands offered are designed for maximum performance for different types of printing. Wang currently offers three bands, each with a different character set, and suited for different printing requirements. The following table lists and describes the bands:

Band	Description
Utility	This band produces the nominal rated speed, and is designed for printing applications with a mix of alpha/numeric characters and some special characters. All characters are replicated at least three times on the band.
EDP	This band provides the highest throughput, and is designed for printing applications in which the majority of printing is alpha/numeric. Print speed will diminish in proportion to the number of times special characters, characters designated as low usage, and characters appearing only once on the band are used.
96-character Upper/Lowercase	This band contains both uppercase and lowercase characters in addition to a greater selection of special characters. Repetition of characters on this band is not frequent due to the large character set, thus the print speed is diminished somewhat. This band is designed for printing applications in which upper/lowercase characters and many special characters are desired.

Each of the three bands described above are available in two font styles: B and C. The B font is similar to OCR B; the characters may be *fancy* described as block type characters. The C font contains characters which are *ery* more open. The Utility band is also available in 15-pitch in the B font. The 15-pitch band also offers a maximum of 132 print positions per line (the print line is shorter).

Band Selection

1. Clearly understand and define the customer's printing requirements. Review the characters available in each of the character sets which match the customer's requirements.

2. Select the type of band desired. Utility is preferred for most general printing applications, EDP is a good choice when the majority of printing does not involve special characters, and 96 Upper/lowercase is best for printing applications in which lowercase characters as well as many special characters are desired. A 64-character Utility band (B font) and an appropriate PROM (part number 377-3002) will be shipped with each printer unless another band and PROM is specified.

3. Select the font style (B or C).

bring 4/5 onto this page

4. Use the Band Selection Chart to obtain the part numbers for bands and PROMs. <u>Do not</u> order more than one PROM with the same part number. It <u>is</u> recommended that PROMs be factory installed.

5. The Model 2273 (-1,-2, V-1S, V-2S) provides a maximum of three PROM locations. This limits the number of character sequences, but <u>not</u> the number of different bands that can be used. Thus, up to three PROMs and practically any number of bands can be ordered.

Switches

PAPER STEP, TOP OF FORM, PHASE control, LINES per inch (6 or 8), TEST, COPIES control, and Forms Length Selector

Lamps

Power On, ON/OFF LINE, ALARM/CLEAR, and STATUS indicator

Cabling

12 ft. (3.66m) cable with connector to CPU

Controller

Wang Line Printer Controller/CPU Interface / Input/Output Processor

Power Requirements

Domestic (USA)
115 VAC +- 10%
60 Hz +- 1 Hz
250 Watts (maximum)
International
115 or 230 VAC +- 10%
50 or 60 Hz +- 1 Hz
250 Watts (maximum)

Model Changes

Modéfications from Model 1 to Model 2 cannot be accomplished in the field.

Transfer from 2200 to VS

Specific requests should be addressed via Special Products Group through RFQ.

SPECIFICATIONS

Printer Size

```
Height  . . . . . . 14.9 in. (39.2 cm)
Width   . . . . . . 30.3 in. (75.7 cm)
Depth   . . . . . . 25.2 in. (63.0 cm)
```

Approximate Net Weight (Printer)

138 lb (62.4 kg)

Stand Size

```
Height  . . . . . . 28.84 in. (74.3 cm)
Width   . . . . . . 30.3 in. (78.2 cm)
Depth   . . . . . . 25.2 in. (21.4 cm)
```

Approximate Net Weight (Stand)

32 lb

Speed

```
Model 2273-1 . . . 250 lines per minute (nominal)
Model 2273-2 . . . 600 lines per minute (nominal)
```

Paper Specifications

Standard fanfold margin punched paper
Width -- 3 in. (minimum) to 16 in. (maximum)
(7.62 cm to 40.6 cm)
Length -- up to 12 in. (up to 30.48 cm)
fixed form length.
Maximum Thickness -- up to 0.02 in. (0.5 mm)
Weight

Single Copy -- 15 lb minimum,

18 to 20 lb recommended

Multi-copy -- 12 lb with 1 to 6 part forms

2273-*1* 8 weeks
2273-2 20 weeks
_____
2273-1 upgradable to 2273v-1

(15-1 not upgradable to 15-2)

Band Selection Chart

Model 2273-1	48 Band	PROM	64 Band	PROM	96 Band	PROM
Utility B	725-25412	377-3001	725-25421	377-3002		
Utility C	4		725-25432	377-3002		
Utility 15	4		725-25441	377-3002		
EDP B	4		725-25451	377-3003		
EDP C	4		725-25462	377-3003		
U/L Case B	not avail		not avail		725-25471	377-3004
U/L Case C	not avail		not avail		725-25482	377-3004

Model 2273-2	48 Band	PROM	64 Band	PROM	96 Band	PROM
Utility B			725-25493	377-3002		
Utility C			725-25503	377-3002		
U/L Case B					725-25513	377-3004
U/L Case C					725-25523	377-3004

Key
1 = 4 week delivery
2 = 16 week delivery   from announcement
3 = 20 week delivery

NoTe: Foreign Language Bands and Prom are avaible upon Pequest.

/ :

PRODUCT STATISTICS

Model Number:	2273-1	2273-2	2273V-1S	2273V-2S
Part Number:	177-22731	177-22732	177-22VS74	177-22VS76
Attaches to:	All 2200 CPUs	All 2200 CPUs	VS ⟶|	VS ⟶|
Release Date:	April 1, 1979	April 1, 1979	April 1, 1979	April 1, 1979
Delivery:	8 weeks	20 weeks	20 weeks	20 weeks
Warranty:	Standard	Standard	Standard	Standard
Classification:	Mechanical	Mechanical	Mechanical	Mechanical
Commission:	5%	5%	3%	3%
Bands:	$400	$400	$400	$400
PROMs:	$50	$50	$50	$50

Ribbons (725-2540)
(Box of 6 only)

1-3 boxes	4-6 Boxes	more Than 6 Boxes
75.00	70.00	65.00
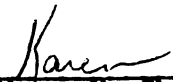
WANG LABORATORIES, INC.

MEMO TO: BASIC SYSTEMS SUPPORT GROUP

FROM: KAREN SKINGER

SUBJECT: 2273 BAND PRINTER

DATE: AUGUST 23, 1979

The 2273 Band Printer can be extended up to 50' from the CPU using a standard printer extension cable. Part numbers are:

Part #	Length	Price
120-2225-25	25'	$45.00
120-2225-50	50'	$85.00

Karen V. Skinger

KVS:ss

WANG LABORATORIES, INC.

MEMO TO: BASIC SUPPORT GROUP

FROM: JON NEWMAN

SUBJECT: UPPER CASE BAND PRINTER

DATE: SEPTEMBER 28, 1979

Some of you may have had questions on why a 2273 Band Printer which has either the 48 or 64 character band will print spaces when it receives lower case character Hex codes. The reason is, promchips for these bands do not understand those codes.

An alternative to upgrading the band to a 96 character band is to have the customer engineers make a change to the printer controller. Barry Fish of home office customer engineering has the specific information on what the change is.

This change however is temporary since data products is looking for a change in the printer that would make modification to the controller board unnecessary.
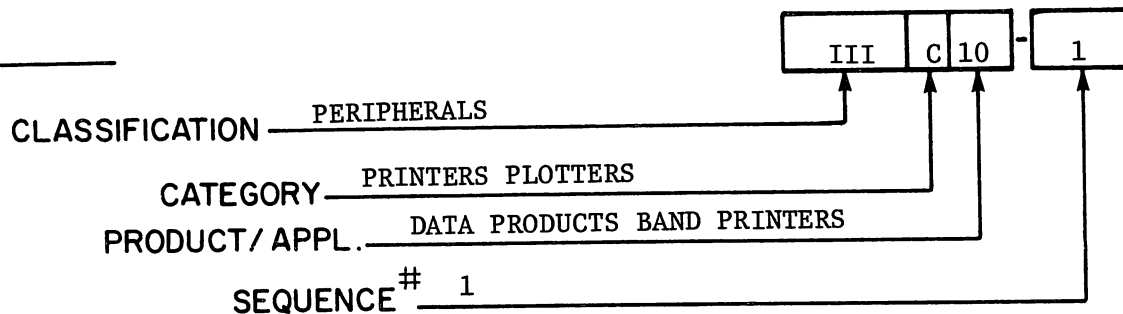
Jon Newman

JN:ss

Not available
any longer

PRODUCT SERVICE NOTICE

DATE : ___1/15/80___

	III	C	10	-	1

CLASSIFICATION —— PERIPHERALS

CATEGORY —— PRINTERS PLOTTERS

PRODUCT/ APPL. —— DATA PRODUCTS BAND PRINTERS

SEQUENCE # —— 1

TITLE:

2273/2273V BAND PRINTER: CIRCUIT BOARD INFORMATION

This PSN documents information that should be considered when replacing circuit boards in a 2273/2273V Band Printer or when returning Band Printer boards to the Home Office. The particular item(s) on each board that are of importance during this consideration follow the circuit board descriptions and part numbers given below.

1) Processor Board, WL #726-1105 (OEM #257315-001); band time-out switch, operate-program PROM's, and band-image PROM('s).

2) Centronics Interface Board, WL #726-1108 (OEM #257265-001); configuration switches, FLSS PROM, and data-decode PROM.

3) Timing & Status Board, WL #726-1107 (OEM #257325-001); print-inhibit switch, band-speed header, and programmable header.

4) Hammer Driver Board, WL #726-1101 (OEM #251165-001); hammer flight-time header.

The items concerned can be divided into two groups:

1) PROM's and headers (jumper plugs).
2) switch settings.

These groups are covered in the following two sections.

1. PROM'S AND HEADERS (JUMPER PLUGS)

   A.   PROM'S

   The five operate-program PROM's (MEM1-MEM5) and the band-image
   PROM('s) (MEM6-MEM8) on the Processor Board (ref: FIGURE 1) are
   not loaded on circuit boards obtained from the Home Office. The
   same is true for the FLSS PROM (MEM1) and the data-decode PROM
   (MEM2) on the Centronics Interface Board (ref: FIGURE 2). When
   returning one of these boards to the Home Office, remove the
   PROM's so they may be inserted into an incoming board. If
   necessary, the PROM's may be ordered from the Home Office under
   the following part numbers:

WL #	PROGRAM PROM KITS (5 PROM'S)	OEM #
726-1217	300 LPM	250531-001
726-4418	600 LPM	257204-001

WL #	BAND IMAGE PROM'S	OEM #
725-2598	48 Character Utility, 300/600 LPM	250536-023
725-2617	64 Character Utility, 300/600 LPM	250525-019
725-2600	96 Character, U/L Case, 300/600 LPM	250529-022

WL #	DESCRIPTION	OEM #
726-1110	Data-Decode PROM, 300/600 LPM	257290-001
726-1152	FLSS PROM, 300/600 LPM	249320-001

NOTE:

The FLSS PROM is only used in parallel
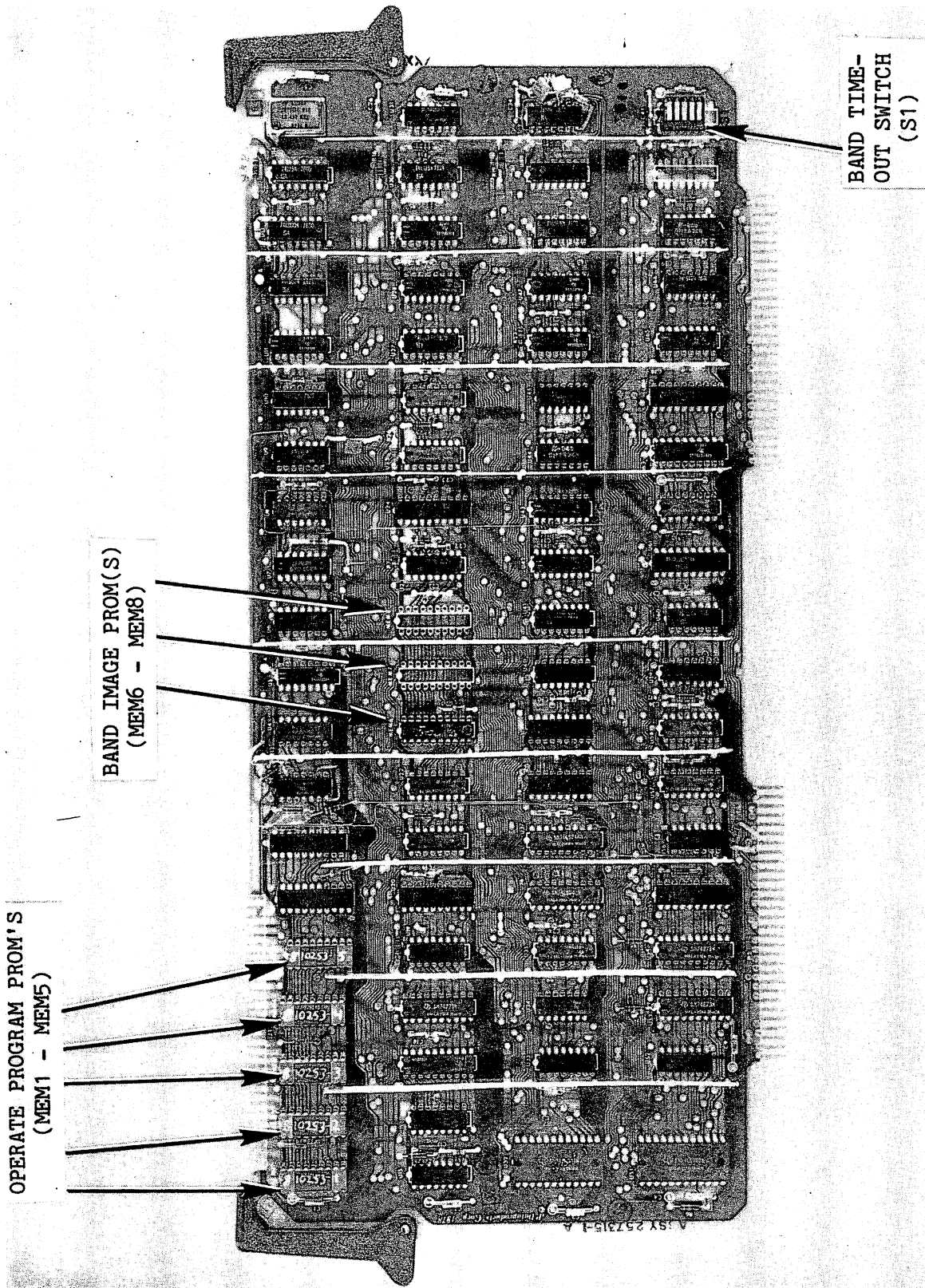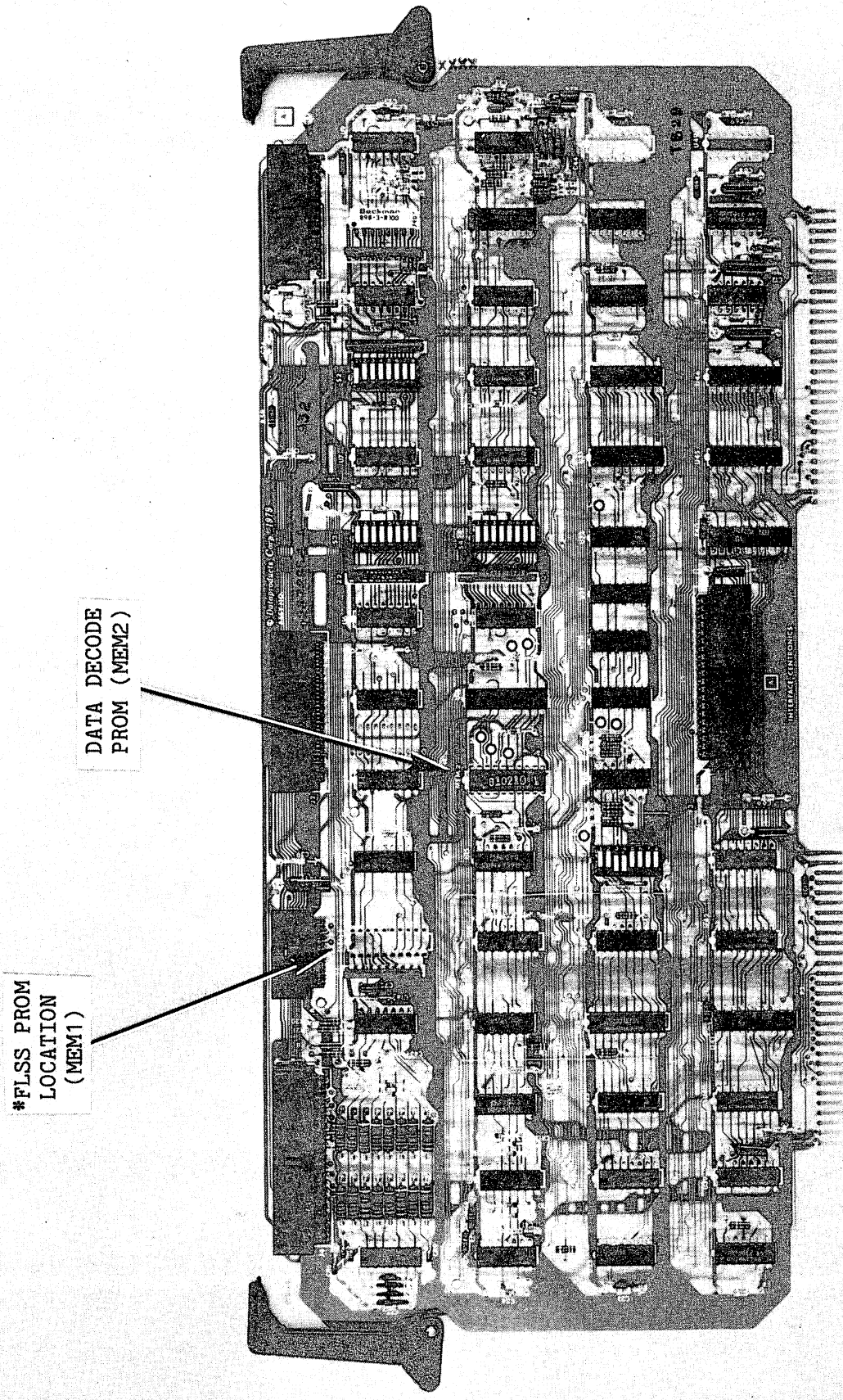versions of the Band Printer.

BAND TIME-OUT SWITCH (S1)

BAND IMAGE PROM(S) (MEM6 - MEM8)

OPERATE PROGRAM PROM'S (MEM1 - MEM5)

FIGURE 1. PROCESSOR BOARD

DATA DECODE PROM (MEM2)

*FLSS PROM LOCATION (MEM1)

FIGURE 2. CENTRONICS INTERFACE BOARD

*PARALLEL VERSIONS ONLY

BAND SPEED
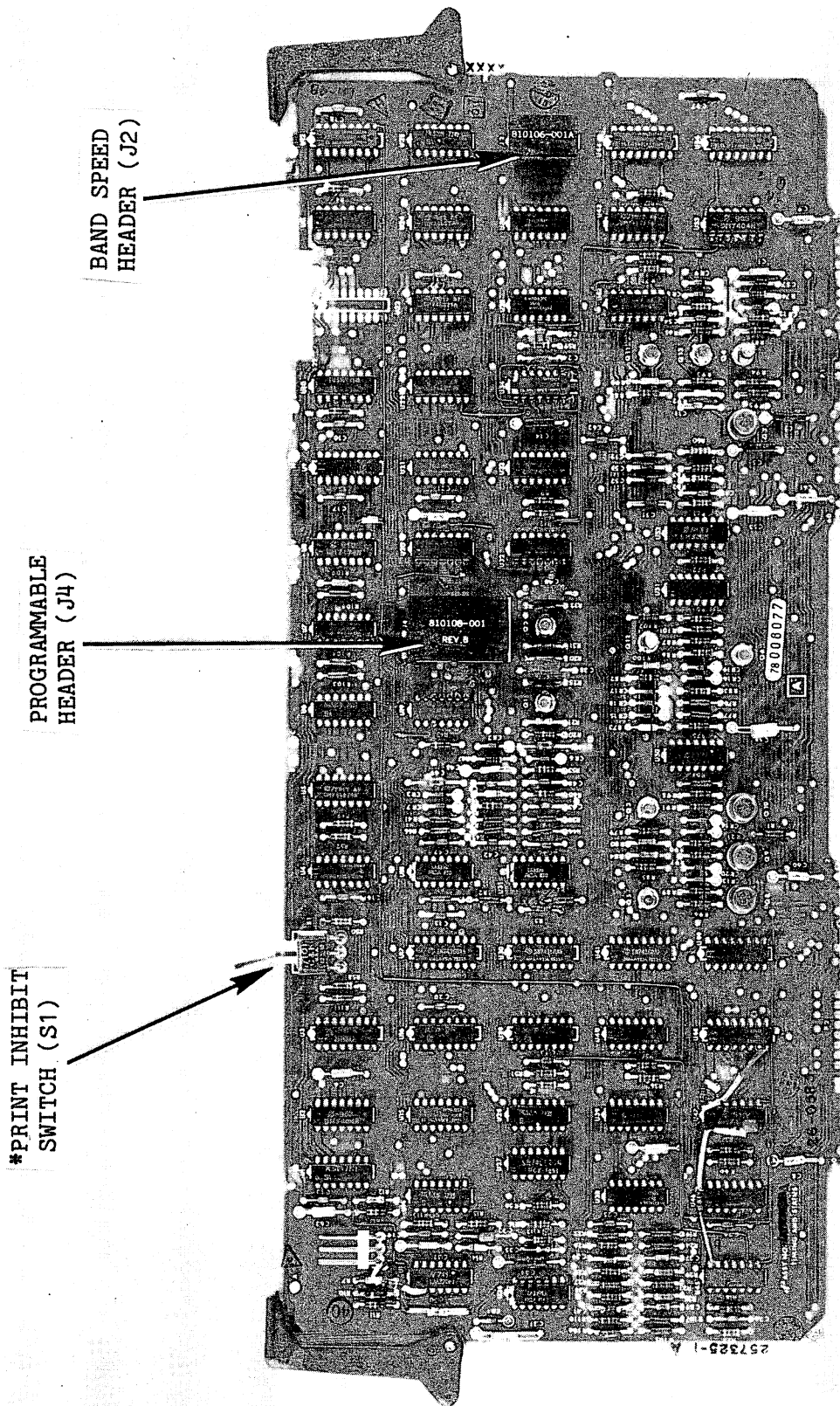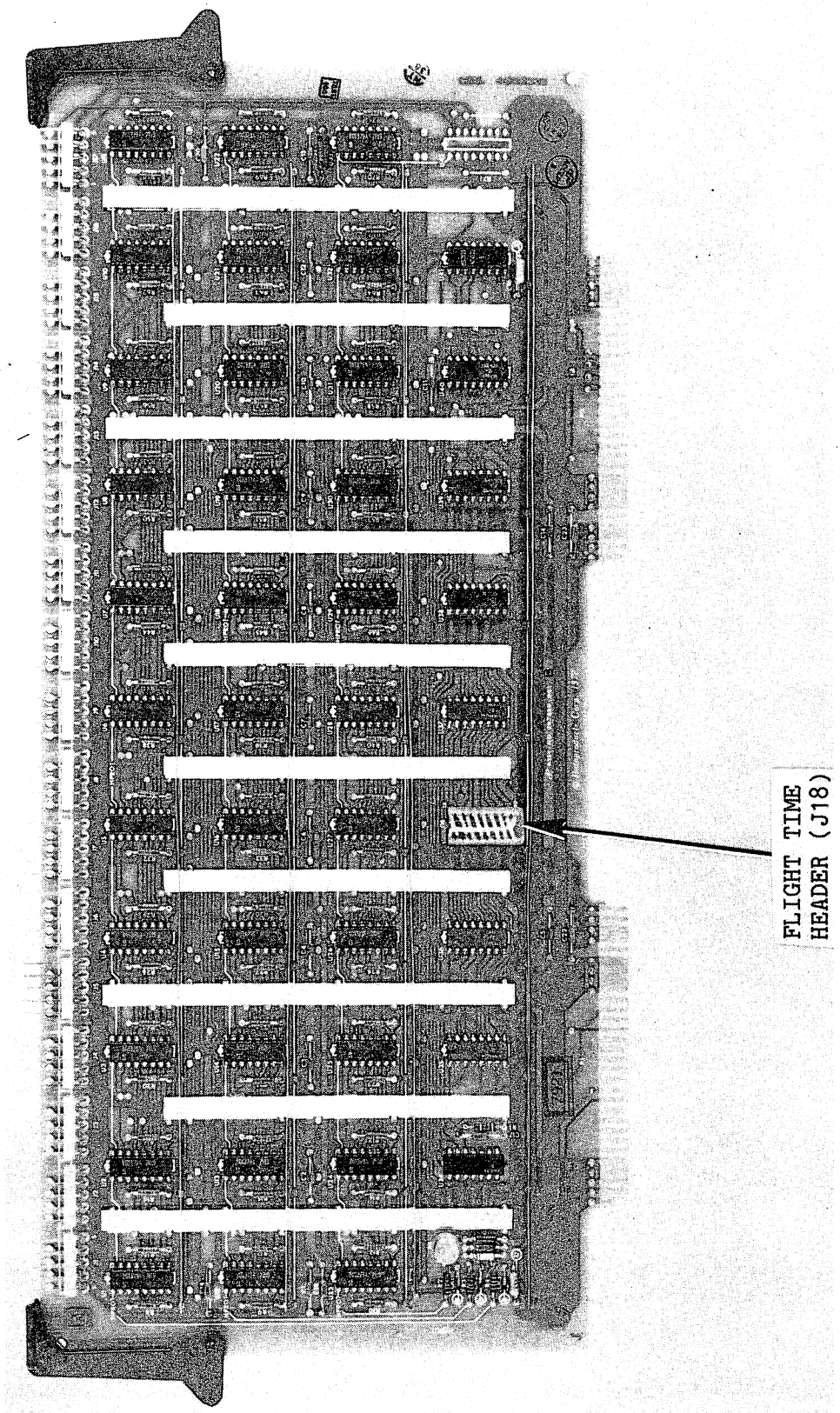HEADER (J2)

PROGRAMMABLE
HEADER (J4)

*PRINT INHIBIT
SWITCH (S1)

FIGURE 3.   TIMING & STATUS BOARD

*SHOWN IN
DISABLED
POSITION

FLIGHT TIME
HEADER (J18)

FIGURE 4. HAMMER DRIVER BOARD

B. HEADERS (JUMPER PLUGS)

The band-speed header (J2) and the programmable header (J4)
(both on the Timing & Status Board; refer to FIGURE 3) and the
hammer flight-time header (J18) (on the Hammer Driver Board;
refer to FIGURE 4), like the PROM's mentioned in Section A, are
not loaded in circuit boards distributed by the Home Office
Customer Engineering Department. Remove all headers from these
boards before returning the boards to the Home Office. Part
numbers to be used when ordering are:

WL #	DESCRIPTION	OEM #
726-1211	Band-Speed & Programmable Header Kit, 300 LPM	257435-001
726-1212	Band-Speed & Programmable Header Kit, 600 LPM	257435-003
726-1213	Flight-Time Header, 300 LPM	257436-001
726-1214	Flight-Time Header, 600 LPM	257436-003

2. SWITCH SETTINGS

A. The print-inhibit switch (S1) on the Timing & Status Board (ref:
FIGURE 3) must be in the "disable" position to allow the hammer
drivers to operate. When replacing the Timing & Status Board,
ensure this switch is in the correct position.

B. There are four configuration switches (bank-type) on the
Centronics Interface Board. Ensure switch settings are correct
when replacing the Interface Board. 300 lpm units and 600 lpm
units have identical switch settings. FIGURE 5 shows the
correct switch settings for the parallel version of the Band
Printer; FIGURE 6 shows the correct switch settings for the
serial version of the Band Printer. An explanation of the
significance of each individual switch follows.

NOTE: X = Not used

SWITCH BANK 1

1- X
2- X
3- OFF: Data 80-bit enabled
4- OFF: Input PRIME disabled
5- OFF
6- X
7- X
8- OFF: Parity option disabled

SWITCH BANK 2

1- OFF: No printer supplied line feed after carriage return
2- OFF: Skip 3 lines at bottom of form
3- OFF: Skip 3 lines at bottom of form
4- OFF: Print to bottom of form when paper runs out
5- OFF: No line feed after carriage return due to buffer full
6- OFF: Default to 11-inch form
7- OFF: DELETE (HEX 7F) disabled
8- OFF: Error after 8 carriage returns without linefeed
   ON: Error after 140 carriage returns without linefeed

SWITCH BANK 3

1- OFF: Bottom of form skip over disabled
2- OFF: No print on paper feed command
3- OFF: Single space
4- X
5- OFF: Tape read not available
6- X
7- X
8- X

SWITCH BANK 4

1- OFF
2- OFF
3- OFF
4- OFF
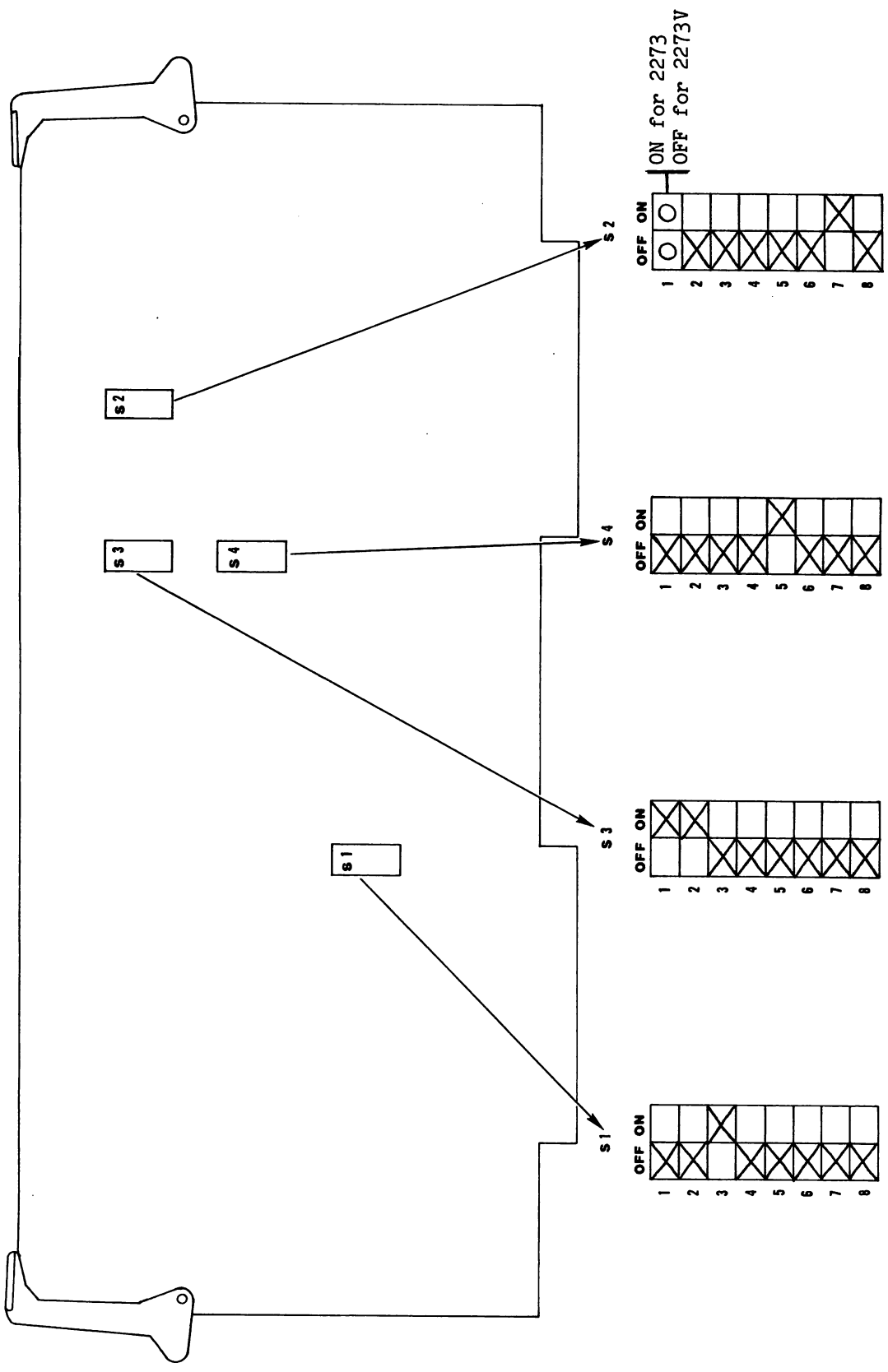5- OFF: Do not shorten step-count on bottom of form
6- X
7- X
8- X

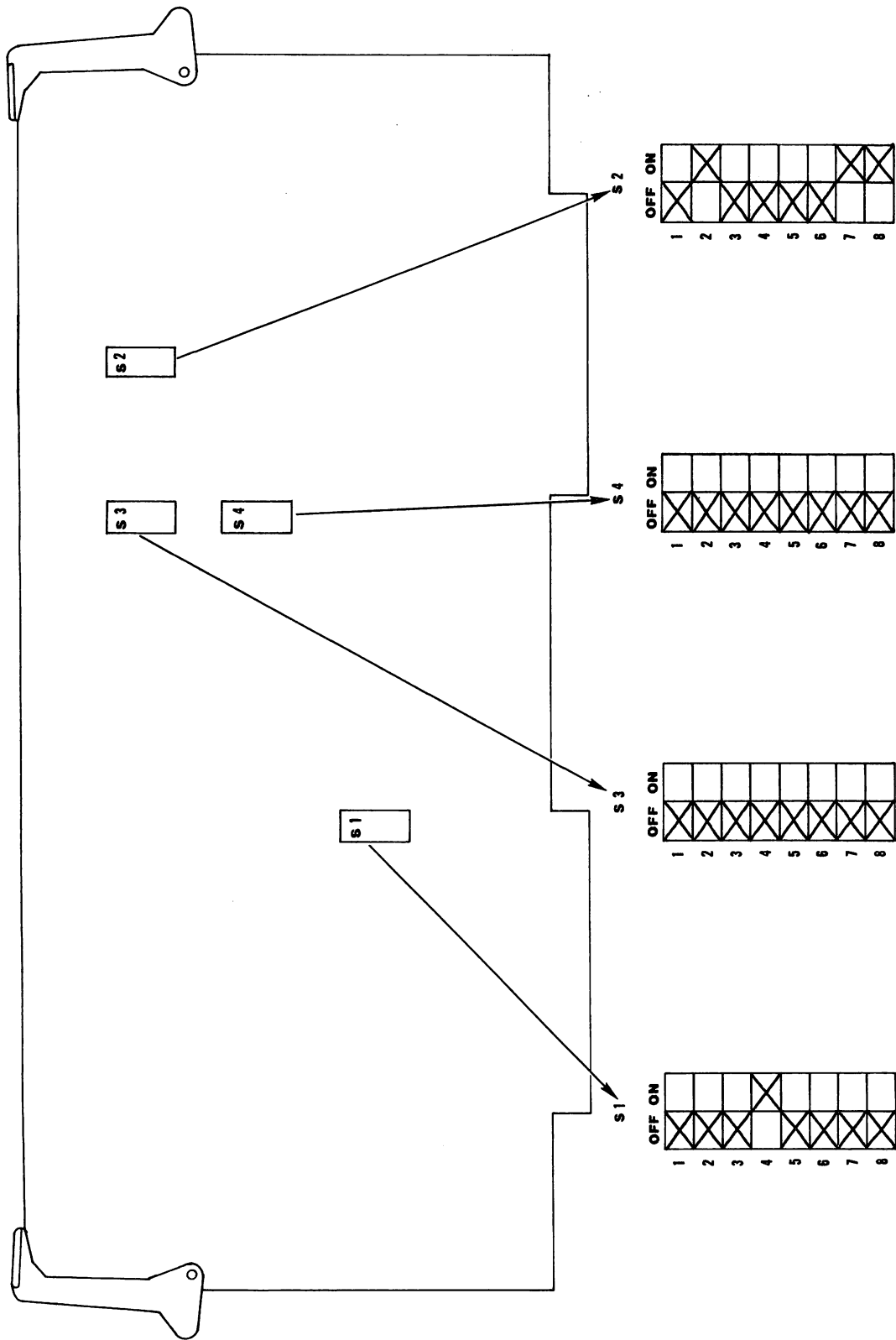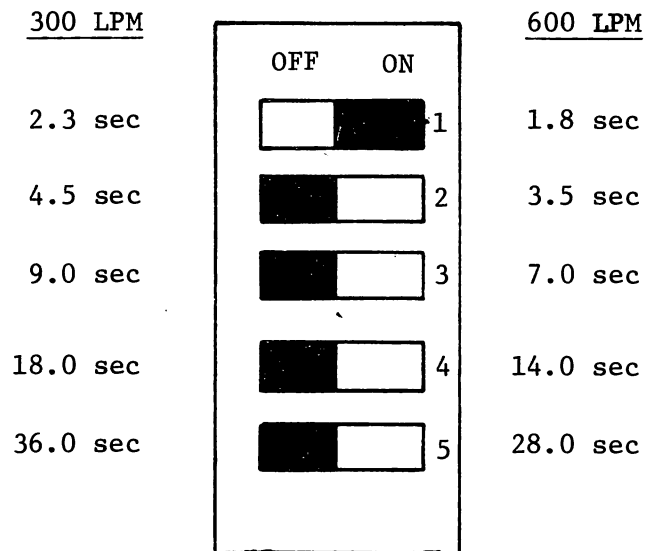FIGURE 5.   PARALLEL PRINTER CONFIGURATION SWITCH SETTINGS

FIGURE 6. SERIAL PRINTER CONFIGURATION SWITCH SETTINGS

C. The new type Processor Board (OEM #257315-001, WL #726-1105) has
    a bank-type, band time-out switch (S1) loaded in location U69.
    Ensure that the switch is set correctly when replacing the
    Processor Board. The switch setting is the same for 300 lpm and
    600 lpm units. The setting is also the same for serial and
    parallel versions of the Band Printer. (Refer to FIGURE 1 and
    the figure below.)

300 LPM	OFF ON	600 LPM
2.3 sec	☐■ 1	1.8 sec
4.5 sec	■☐ 2	3.5 sec
9.0 sec	■☐ 3	7.0 sec
18.0 sec	■☐ 4	14.0 sec
36.0 sec	■☐ 5	28.0 sec

NOTE:

1. The band time-out switch is not loaded in old type
    Processor Boards (OEM #251770-001, WL #726-1105).

2. If all the band time-out switches are OFF, the band
    will not start.

3. If a customer wishes, the time-out may be increased
    by having the Customer Engineer activate the appropriate
    switch or switches until the desired time is selected.
    If more than one switch is activated, add each switch
    delay time for the actual delay.

TO: 2200 GP
FM: LTT
RE: 2273 PROMS

There has been an across-the-board change in the part-numbering scheme for print band proms.

Essentially, there are only two PROMS to worry about ----

        1. Any 64-char band uses PROM 725 - 2617
        2. Any 96-char band uses PROM 725 - 2600

Above holds true for both the 2273-1 and 2273-2 printers. It also holds regardless of font style - B,C or Utility 15 where applicable.

In theory, there is another prom --

        3. Any 48-char band uses PROM 725 - 2598

However, the 48-character band is not in stock and not likely ever to be.

Source for the above: Marty Kenney, 9 Dec 80

Somewhat peripherally, it is noted that the auto-enclosure band for the 2273-1 is the 64-char utility B, which is supplied unless the customer explicitly requests some other band at the time of placing the order

Source: Kenney Papas., 9 Dec 80

<u>MEMO</u>

  TO: 2200 Support Group
FROM: Alan Goldman
DATE: March 24, 1981

SUBJ: Bug in 2200 MVP Demo Release 2.0 - Ratings for 2273 Series Band Printers

<u>2200 MVP Demo Release 2.0</u>

There is a bug in the 2200 MVP Demo which produces an error P55 in program
IDEAS332. It is in the POS Inventory Management module when option SF'0 is
selected (POS Inventory Listing Before Update). The remedy is to replace IDEAS
Release 1.0 with Release 1.3 which corrects the problem. Stan Neumann has been
told and will release an updated demo package.

<u>Model 2273 Band Printer - Net Print Speed Ratings</u>

The following table is representative of <u>actual</u> speed of Models 2273-1 and
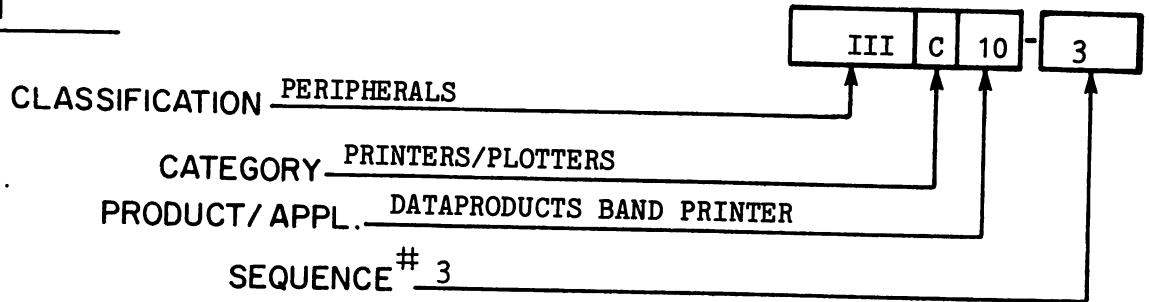2273-2 Band Printers.

<u>MODEL</u>	<u>BAND</u>	<u>NET LPM</u>
2273-1	* 48	367
	64	300
	96	224
2273-2	* 48	734
	64	600
	96	447

* NOTE: Wang does not offer a 48 character band via Supplies.

These are actual <u>net</u> speed ratings extrapolated from an advertisement by
Dataproducts, Inc. who manufacture the 2273 Band Printer.

PRODUCT SERVICE NOTICE

DATE : 05/01/81

| III | C | 10 | - | 3 |

CLASSIFICATION PERIPHERALS

CATEGORY PRINTERS/PLOTTERS

PRODUCT/ APPL. DATAPRODUCTS BAND PRINTER

SEQUENCE # 3

TITLE:

DATAPRODUCTS BAND PRINTER PARALLEL-TO-SERIAL CONVERSION KIT

A kit is available to convert a Dataproducts Model 2273-1 Parallel Band Printer into a Model 5573 Serial Band Printer or for converting a Model 2273-2 into a Model 5574. The kit can be ordered through the Wang Marketing Department under part number 205-3049 (for 50-Hz printers) or part number 206-3049 (for 60-Hz printers).

NOTE

Do not order Conversion Kit 205-3049 or 206-3049 through the Customer Engineering Logistics System.

The conversion procedure consists of removing the parallel I/O connector, PCB cover, and FLSS panel and cable and then installing a new PCB assembly, PCB cover, interface connector, ground plate, and interface coaxial cable. Detailed step-by-step conversion instructions are supplied as part of each kit.