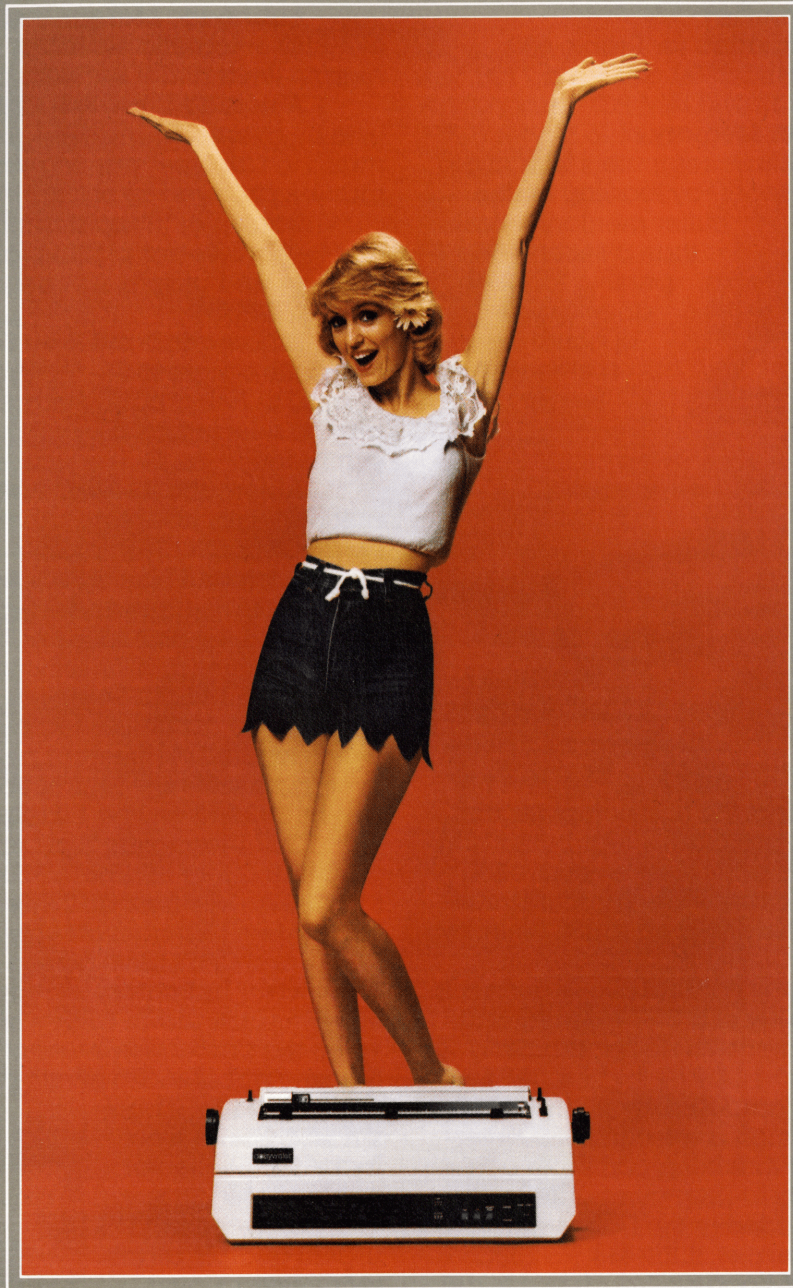


daisywriter®



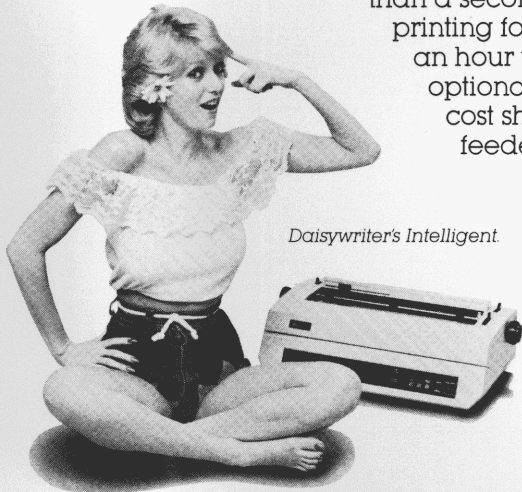
Model 2000
Intelligent letter-quality printer

Why Daisywriter is the most powerful letter-quality printer in the world...

Daisywriter's proprietary Z80-based Computer-Optimized Printer Interface and Emulation System* (COPIES) provides the most powerful features that you will find in any letter-quality printer:

Protocol Emulation for Diablo 630, Qume Sprint 9/11, NEC 3500, 5500 and 7700 series, Centronics 737 and IBM PC.

Built-in Buffer Memory of 16 Kbytes (48 Kbytes optional), allows computers with single task limitations to "spool" by loading up the buffer memory in less than a second and printing for up to an hour with optional low-cost sheet feeder or



Daisywriter's Intelligent

tractor. While printing, the host computer can be used for other operations. Clear buffer and reprint buffer commands may be controlled by the front panel or software. The buffer can be automatically reprinted up to 255 times by software control.

CRT Hard Copy Printout allows dumping the full screen display of a CRT instantly and directly to Daisywriter with no handshaking required.

Computer Compatibility is easily accomplished through a selection of 50 interface signals and a matching computer cable for immediate plug-to-plug compatibility. Four interfaces are included in the Daisywriter: Centronics 8 bit parallel, IEEE-488, RS-232C and 20 ma Current Loop.

Special Diagnostic Protocol prints incoming software commands in hex code underlined, in addition to printing the text—it's a powerful software debugging tool.

Special Daisykey™ Protocol allows microcomputers and terminals which normally cannot issue "ESC" commands to do so by substituting "!" (or any other character) for this command.

Software Commands (more than 75) are recognized by Daisywriter, including most word processing functions. Daisywriter is almost a word processor!

Automatic Margin Justification includes automatic centering and changed margin limits under software command.

Automatic True Proportional Spacing uses an internal character spacing table optimized to Linotype™ printing standards, which may be changed by software command.

Daisyplot™ Graphics include absolute and relative vector plotting for easy creation of charts and graphs. It's compatible with Diablo HYPLOT.

Automatic Baud Rate Selection automatically adapts to the incoming baud rate from 50 to 19,200 baud (16 baud rates may also be selected by dip switches or software command).

Automatic RS-232C Protocol Selection automatically adapts to either ETX/ACK or DC1/DC3 (X ON/OFF) protocols of EIA RS-232C.

Pitch and Line Space Selection enables a choice of 10, 12, 15 or 20 characters per inch pitch and 1, 1½ or 2 lines-per-line-feed by front panel switches and/or software command.

Form Length Selection from 10 to 109 lines can be accomplished by a thumbwheel switch located on the front panel, or 1 to 255 lines using software control. Forms or cut sheets can be printed on line 1 if required.

Self Diagnostic Test completely tests the printer and four internal CPU's, printing a sliding pattern of 8 lines and then halts. On power up, a green LED goes on only after all RAM's, ROM's and CPU's have passed a diagnostic test.

Error Indicators include a red LED and three audible alarm rates which are activated when the printer is in an error mode: paper-out, and ribbon-out activate a long and short audible alarm. If print-wheel cassette is not

locked in position or printer carriage is jammed, a faster, urgent audible alarm is activated. Cover

open activates a slower, less urgent, audible rate. The audible alarm can be turned off from the front panel.



Daisywriter's powerful.

Partial List of Software Commands

Control Codes

BEL	Bell
BS	Backspace
CR	Carriage Return
DC1	Select Printer
DC3	Set Printer Off-Line
EM	Print in "SP" Location
ESC	Escape
ETX	End of Text
FF	Form Feed
HT	Horizontal Tab
LF	Line Feed
SI	Parallel Select
SO	Serial Select
SP	Space
STX	Start of Text
VT	Vertical Tab

Carriage Movement

ESC P	Set Hor. Pitch to 10ch/inch
ESC E	Set Hor. Pitch to 12ch/inch
ESC M	Set Hor. Pitch to 15ch/inch
ESC US	Set Hor. Pitch Variable
ESC 9	Set Left Margin Absolute
ESC 0	Set Right Margin Absolute
ESC 1	Clear Left & Right Margin & H Tabs
ESC HT	Set Horizontal Tab Table

Graphics

ESC .	Graphics Mode ON
ESC /	Cancel Graphics Mode
ESC !	Daisyplot ON

Paper Movement

ESC 3	Set Vert. Spacing at 1.0 line/LF
ESC 4	Set Vert. Spacing at 1.5 lines/LF
ESC 6	Set Vert. Spacing at 2.0 lines/LF
ESC 8	Set Vert. Pitch
ESC FF	Set Form Length
ESC +	Set Top Margin
ESC -	Set Bottom Margin
ESC VT	Set Vertical Tab Table
ESC 2	Clear Page Length, BM, TM & V Tabs
ESC F	Paper Feed Forward Number of Lines
ESC R	Paper Feed Reverse Number of Lines

Word Processing Functions

ESC U	Subscript
ESC D	Superscript
ESC O	Boldface ON
ESC W	Shadow Print ON
ESC A	Print in Red (Optional)
ESC B	Print in Black
ESC &	Boldface & Shadow Print OFF
ESC I	Underline ON
ESC J	Underline OFF
ESC H	Auto Justification ON
ESC UA	Change Justification Limits
ESC =	Auto Centering ON
ESC X	Boldface, Shadow, Red, Underline, Justification and Centering OFF
ESC Y	Proportional Spacing ON
ESC Q	Proportional Spacing OFF
ESC SP	Change Proportional Spacing Value

General

ESC DC2	Clear Text Buffer
ESC DC4	Reprint Text Buffer
ESC Vn	Select Baud Rate
ESC SUB	General Reset
ESC ESC	Select Protocol
ESC .	Auto Line Feed After CR ON
ESC *	Auto Line Feed After CR OFF

American English Print Samples

<p>QUADRO 15/20 Model AE-03 ABCDEFGHIJKLMNOPQRSTUVWXYZabcdef ghijklmnopqrstuvwxyz0123456789;; <=>?@[±]²₀¹/₄½¾§³!"#\$%&'()*+,-./¢</p>	<p>BROUGHAM 10* Model AE-11 ABCDEFGHIJKLMNOPQRSTUVWXYZabcdef ghijklmnopqrstuvwxyz0123456789;; <=>?@[±]²₀¹/₄½¾§³!"#\$%&'()*+,-./¢</p>
<p>QUADRO 10/12 Model AE-01 ABCDEFGHIJKLMNOPQRSTUVWXYZabcdef ghijklmnopqrstuvwxyz0123456789;; <=>?@[±]²₀¹/₄½¾§³!"#\$%&'()*+,-./¢</p>	<p>GRANDE 10 Model AE-07 ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEF GHIJKLMNOPQRSTUVWXYZ0123456789;; <=>?@[±]²₀¹/₄½¾§³!"#\$%&'()*+,-./¢</p>
<p>PRESTIGE 10/12 Model AE-02 ABCDEFGHIJKLMNOPQRSTUVWXYZabcdef ghijklmnopqrstuvwxyz0123456789;; <=>?@[±]²₀¹/₄½¾§³!"#\$%&'()*+,-./¢</p>	<p>PICA 10 Model AE-06 ABCDEFGHIJKLMNOPQRSTUVWXYZabcdef ghijklmnopqrstuvwxyz0123456789;; <=>?@[±]²₀¹/₄½¾§³!"#\$%&'()*+,-./¢</p>
<p>PRESTIGE ITALIC 10/12 Model AE-05 ABCDEFGHIJKLMNOPQRSTUVWXYZabcdef ghijklmnopqrstuvwxyz0123456789;; <=>?@[±]²₀¹/₄½¾§³!"#\$%&'()*+,-./¢</p>	<p>SYMBOL 10 Model AE-10 ∞ψφ←+Λ↑Π§Ωθ~+↓Γ∑→ΞαΔ≡Τ≈αβψφε> ληιπκωμνρσγθστξδχυζ 0 1 2 3 4 5 6 7 8 9 (\ ♀ ♂ ∇ ^ † ‡ ~ _ { } ≥ ≤ ⊙ ⊛ ⊞ ⊠ ⊡ ⊢ ⊣ ⊤ ⊥ ⊦ ⊧ ⊨ ⊩ ⊪ ⊫ ⊬ ⊭ ⊮ ⊯ ⊰ ⊱ ⊲ ⊳ ⊴ ⊵ ⊶ ⊷ ⊸ ⊹ ⊺ ⊻ ⊼ ⊽ ⊾ ⊿ ⊿</p>
<p>SCRIPT 10/12 Model AE-04 ABCDEFGHIJKLMNOPQRSTUVWXYZabcdef ghijklmnopqrstuvwxyz0123456789;; <=>?@[±]²₀¹/₄½¾§³!"#\$%&'()*+,-./¢</p>	<p>ASCII 10 Model AE-13 ABCDEFGHIJKLMNOPQRSTUVWXYZabcdef ghijklmnopqrstuvwxyz0123456789;; <=>?@[\] ^ _ ` { } ~ ! " # \$ % & ' () * + , - . / ¢</p>
<p>ELITE 12 Model AE-08 ABCDEFGHIJKLMNOPQRSTUVWXYZabcdef ghijklmnopqrstuvwxyz0123456789;; <=>?@[±]²₀¹/₄½¾§³!"#\$%&'()*+,-./¢</p>	<p>WP 10 Model AE-14 ABCDEFGHIJKLMNOPQRSTUVWXYZabcdef ghijklmnopqrstuvwxyz0123456789;; <=>?@[/ [" # ° = ' \$ + . ! © , * - \$ () % ⊕ † ‡ ⊣ ⊤ ⊥ ⊦ ⊧ ⊨ ⊩ ⊪ ⊫ ⊬ ⊭ ⊮ ⊯ ⊰ ⊱ ⊲ ⊳ ⊴ ⊵ ⊶ ⊷ ⊸ ⊹ ⊺ ⊻ ⊼ ⊽ ⊾ ⊿ ⊿</p>
<p>BROUGHAM 12* Model AE-12 ABCDEFGHIJKLMNOPQRSTUVWXYZabcdef ghijklmnopqrstuvwxyz0123456789;; <=>?@[±]²₀¹/₄½¾§³!"#\$%&'()*+,-./¢</p>	<p>OCR-B 10 Model AE-09 ABCDEFGHIJKLMNOPQRSTUVWXYZabcdef ghijklmnopqrstuvwxyz0123456789;; <=>?@[±]²₀¹/₄½¾§³!"#\$%&'()*+,-./¢</p>

most reliable...

Simple Design is expressed in Daisywriter's carrier mechanism. A linear stepping motor magnetically drives the carrier along a rugged stainless steel track. There are no cables, belts, wheels or pulleys to fail, stretch, adjust or malfunction. In addition, three CPU's are utilized to reduce the complexity and number of mechanical parts, contributing to an unusually long life of trouble-free operation.

Modular Construction consists of only five units: platen, carrier, controller, power supply and a single interface-emulator-buffer memory board. Loosening two captive screws allows the cover to be removed for on-site replacement of these modules in minutes. All cables between modules are terminated through connectors for quick disconnect.

Printwheel Cassettes were first introduced by Daisywriter. Printwheels are enclosed in protective, self-aligning, easily-changed plastic cassettes. The protective cassettes prevent damage or breakage of the printwheel petals. They are available in 14 print styles and 16 languages.

Standard IBM Ribbon Cartridges, known for their reliability, are used by Daisywriter. A ribbon-out sensor informs the operator by both a visual and audible alarm.

Production-Proven and Field Tested. Daisywriter's reliable printing mechanism has been in production nearly two years in Brother Industries' model EM-2 electronic typewriter which has been selected as the official typewriter of the 1984 U.S. Olympic games. Over 100,000 units have been produced, tried and proven. Daisywriter's powerful proprietary built-in system which incorporates hardware interfaces, protocol emulation, software and buffer has been designed and is manufactured by Computers International. This combination of a simple, reliable printer mechanism and the advanced single-board computerized system contribute to Daisywriter's extremely high reliability.

'Definition of "Throughput"'

Specifications for printer speed in characters per second (cps) do not have a basis for standardization. Some printer cps specifications are based on unrealistic printing situations such as repetitive printing of the same character, lack of "white space" between characters, and do not account for computing and handshaking delays.

To accurately express Daisywriter's speed in cps, we use the following definitions so you may know what to expect in everyday printing situations:

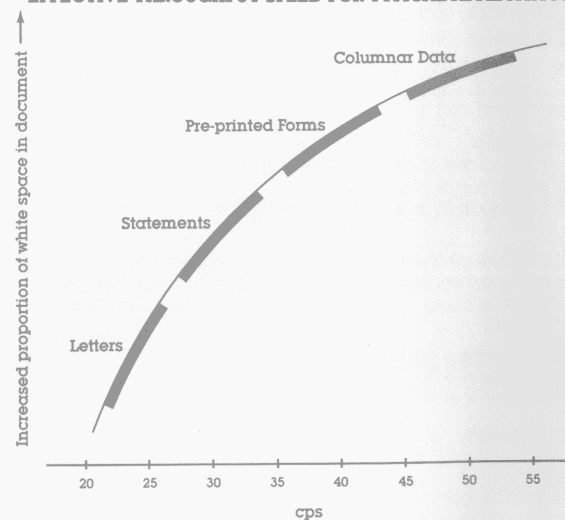
most cost effective...

High-Speed Throughput* is accomplished by utilizing a large buffer memory and special firmware. Daisywriter zips along at up to 200 cps through all "white space," with paper and carriage moving simultaneously, thus increasing effective throughput printing speed to over 40 cps in typical applications, without sacrificing print quality! Printing delays due to numerous carrier and paper movement commands are minimized due to internal sophisticated software and the large buffer memory which allow a "look ahead" to be translated into a simultaneous vertical and horizontal motion. Also, computer handshaking and computing time does not reduce printing speed significantly since the large buffer and special software minimize these delays. Daisywriter's high speed allows the user to print up to 500 pages in a normal 8 hour day using an optional low-cost sheet feeder or tractor.

Daisy chaining of several Daisywriters is cost-effective and also provides flexibility and redundancy.

Low Cost! At half the price of other letter-quality printers that lack most of Daisywriter's advanced features, it is easy to see that on a cost-per-printed-document comparison, Daisywriter is the winner!

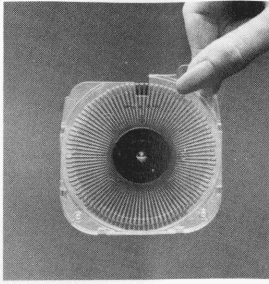
EFFECTIVE THROUGHPUT SPEED FOR TYPICAL APPLICATIONS



White Space: The space between the left and right actual printing margins, from the beginning of the first line to the end of the last printed line, less printed characters, that the carrier moves through, assuming the shortest possible path and bi-directional printing, expressed in characters of the same pitch as the printed characters.

Effective Printing Time: The time from the first computer-issued print command to the last character printed.

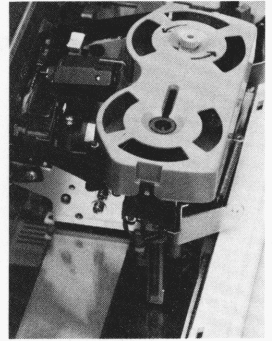
Effective Throughput Speed: A function of the above definitions expressed in cps.



Enclosed printwheel cassettes are available in 12 different type styles and 15 languages. The protective cassettes not only assure 25,000,000 impressions per wheel, they are easily changed, and self-aligning.

Paper Guide/Sound Dampener attaches easily and keeps printer noise to a minimum.

No belts, wheels, cables or pulleys are found in Daisywriter's reliable printing mechanism. A linear stepping motor magnetically drives the carrier along a rugged stainless steel track.

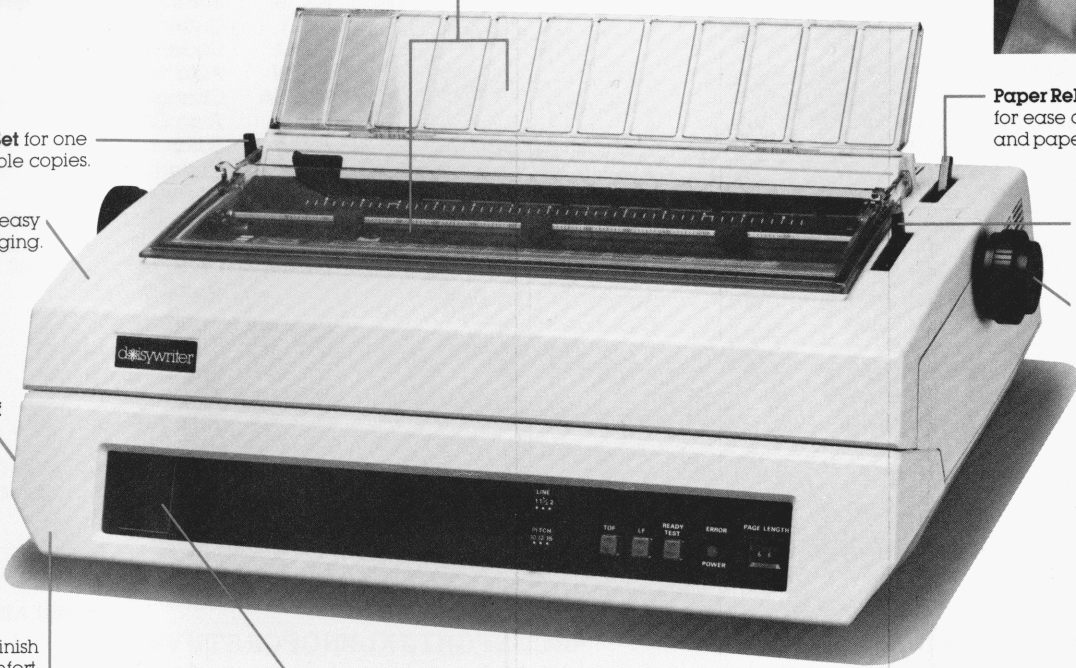


Impression Set for one or multiple copies.

Cover allows easy ribbon changing.

Power On/Off

Off-White finish blends comfortably into any environment.



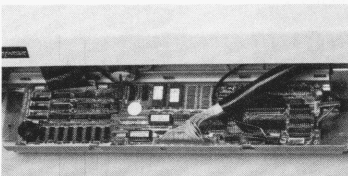
Paper Release makes for ease of loading and paper alignment.

Paper Bail keeps paper tight against platen.

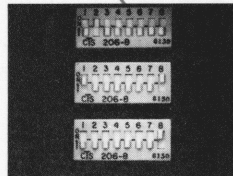
Platen Roller for manual paper feed.

Error indicator lights for paper-out, ribbon-out, printwheel misalignment, printer jam, cover open, framing, parity or overrun errors. An audible alarm also sounds, which can be disabled by pressing TOF button.

Front control panel offers fingertip selection for a variety of functions including reprint and clear buffer memory. Additional functions include:



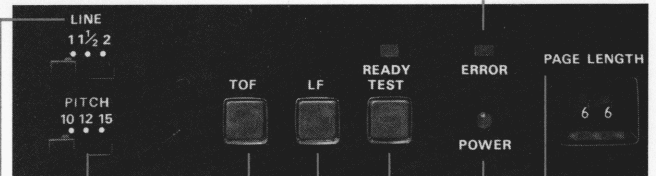
Computer-Optimized Printer Interface and Emulation System™ (COPIES) makes Daisywriter the most powerful letter-quality printer in the world.



24 DIP switches conveniently located on the front panel allow selection of:

- Continuous or Cut Sheet Paper
- Sheet Feeder (special program for optional sheet feeder)
- Invert Reverse Channel (inverts polarity of RSSCA I/O signal)
- Vertical Motion Increment (6 or 8 lines per inch)
- Language hammer impact (up to 16 languages)
- Ready Polarity (changes polarity of ready signal)
- Print/Delete ASCII character 7FH
- Strobe Polarity
- Automatic Baud Rate
- Protocols (Diablo, Qume, NEC, Centronics, IBM PC, Daisywriter, Diagnostic or Daisykey—plus 8 future protocols)
- Automatic Line Feed
- Serial/Parallel
- Parity Odd/Even
- Acknowledge Pulse Polarity
- Polarity On/Off
- 16 Baud rates
- MSB and LSB's of IEEE-488 Device Address.

Daisywriter's optional sheet feeder holds up to 250 sheets of 8½ x 11, legal and A4 size paper.



Pitch selects pica (1/10th"), elite (1/12th") or 1/15th."

Line Spacing selects 1, 1½ or 2 line spacing.

Page Length provides two-digit thumb-wheel selection of form length.

Power indicates power on when lit.

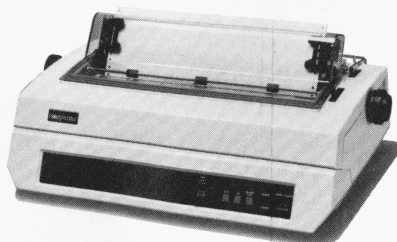
Ready Test on power up, lights after printer passes diagnostic test.

TOF Top Of Form advances form to beginning of next form.

LF Line Feed advances paper one line or continuously.

Depressing TOF and LF simultaneously sets top of form to current paper position.

Optional tractor feed accommodates standard and custom size continuous or fanfold paper or forms.



Specifications

Print Characteristics

Print Element

96 character printwheel cassette
16 languages and 14 font styles
25,000,000 impression life minimum

Languages

16 including: American English, German, Queen's English, Canadian (bilingual), French, Spanish (Latin American), Dutch (South African), Italian, Finnish/Swedish, Norwegian/Danish, Spanish (European) and Swiss (German/French)

Print Styles

Quadro 10/12, 15/20, Prestige 10/12, Script 10/12, Prestige Italic 10/12, Pica 10, Grande 10, Elite 12, OCR-B 10, Symbol 10, Brougham 10, 12, ASCII 10, WP 10

Print Speed

Up to 40 cps effective throughput in typical applications
Up to 200 cps through "white space" (see inside page for definitions)

Print Pitch

Pica 1/10 inch, 132 char/line
Elite 1/12 inch, 158 char/line
1/15 inch, 198 char/line
1/20 inch, 264 char/line software selectable
Automatic true proportional spacing

Paper Width

16.5 inch maximum (420mm)

Printable Line

13.2 inches (334mm)

Paper

Original and 7 copies
Paper-out sensor

Ribbon

IBM-compatible single and multi-strike cartridges
Ribbon-out sensor

Forms Control

Length

10 to 109 lines selectable by front panel thumbwheel switch
1 to 255 lines software selectable

Paper Feed

Frictional, bidirectional, 2 inch/sec maximum, manually adjustable, 1/48 inch vertical increments

Line Spacing

1, 1½, and 2 lines spacing, front panel switch or software selectable
6 or 8 lines per inch software selectable

Carrier

Bidirectional, program-controlled, tab speed 13.75 inches (350 mm) per second, 1/60 inch horizontal increments (software converts 1/120 inch commands to 1/60 inch movements)

Paper Handling Options

Tractor feed
Sheet feeder

Operation

Controls

Power, top of form, form length, line feed, pitch, line spacing, ready, self-test (tests 4 CPU's, ROM's, RAM's and prints all characters)

Indicators

Power on, ready, page length, error (audible and LED for paper out, ribbon out, printwheel misalignment, printer jam, cover open, framing, parity and overrun errors)

Data Buffer

16 Kbyte standard, 48 Kbyte optional

Data Format

Parallel, serial, ASCII code data

Communication Speed

Serial models—50, 75, 110, 134.5, 150, 300, 600, 1200, 1800, 2000, 2400, 3600, 4800, 7200, 9600 and 19200 baud, automatic, DIP switch, or software selectable

Interfaces

Centronics 8 bit parallel, TTL logic levels
IEEE-488, 8 bit ASCII parallel
EIA RS-232C/CCITT V.24, ETX/ACK and DC1/DC3 (X ON/OFF)
Current loop, 20 ma

Reliability

MTBF 4000 hours at 25% duty cycle
MTTR less than 30 minutes (all modular construction, including carrier, replaceable on-site)

Physical Characteristics

Power Requirements

90-132 or 180-264 VAC (specify voltage range)
50/60 Hz
150 watts maximum

Overall Dimensions

Width: 22.4 inches (568 mm)
23.8 inches (605 mm) including platen knobs
Depth: 14.7 inches (374 mm)
Height: 6.7 inches (171 mm)

Weight

35 pounds (16 kg); shipping weight 42 pounds (19 kg)

Color

Off-white

Environmental Conditions

Temperature

Operating: 50°F to 105°F (10°C to 40°C)
Storage: -4°F to 140°F (-20°C to 60°C)

Relative Humidity

Operating: 20% to 80% (non-condensating)
Storage: 2% to 90% (non-condensating)

Altitude

Operating: 0 to 10,000 feet (0 to 3050 m)
Storage: -1,000 to 25,000 feet (-305 to 7620 m)

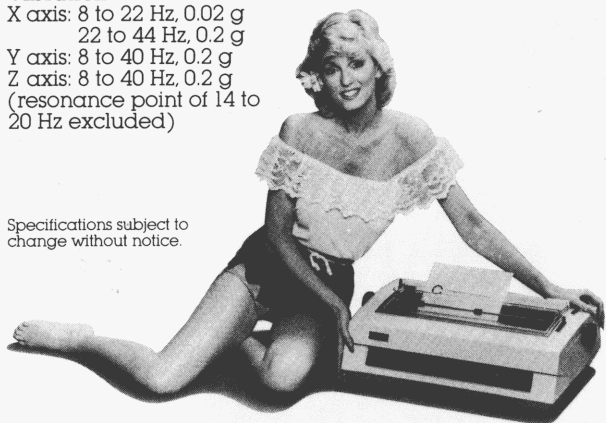
Shock Resistance

2 foot (60 cm) drop test package on 6 sides

Vibration

X axis: 8 to 22 Hz, 0.02 g
22 to 44 Hz, 0.2 g
Y axis: 8 to 40 Hz, 0.2 g
Z axis: 8 to 40 Hz, 0.2 g
(resonance point of 14 to 20 Hz excluded)

Specifications subject to change without notice.



daisywriter®

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