

## MATCHLESS ORDERING INFORMATION

### METHOD OF PAYMENT

We accept cash, checks, money orders, letters of credit, bank transfers, Master Charge or VISA.

### PRICES

Prices are F.O.B. Gardena, CA. Prices and specifications are subject to change without notice. We suggest you contact us for current prices/terms.

### PHONE ORDERS

We will gladly answer any questions you might have and accept your order over the phone.

### MAIL ORDERS

Send a completed order blank along with whatever method payment you choose (including shipping and handling charges).

### OPEN ACCOUNTS

We welcome purchase orders from government agencies, educational institutions, and credit-worthy firms with a favorable Dun & Bradstreet rating. All prices are F.O.B. Gardena, California. Freight charges will be prepaid and added to the invoice. All invoices must be paid within fifteen days after date of shipment. Minimum order \$25.00.

### SHIPPING AND HANDLING

Contact your local United Parcel Service center or MATCHLESS for information. To arrange an alternative method or carrier, call or write.

### OEM QUANTITY ORDERS

Our tremendous on-hand inventory allows us to quote excellent prices and delivery on most large quantity orders. Write for exact prices, lead times, and terms on company letterhead.

### CALIFORNIA SALES TAX

All orders to be delivered within California must include 6% Sales Tax. Exceptions allowed only if a completed and signed standard resale card is submitted with the order.

### RETURNS

All returns are subject to a 15% restocking fee and are accepted only if accompanied by a Return Merchandise Authorization number. To request an R.M.A. number Call (213) 327-1010, or write.

### EXPORT ORDERS

Prices and terms are intended for shipments within the U.S.A. Please contact MATCHLESS SYSTEMS, International Marketing Division, Dept. B1, 18444 S. Broadway, Gardena, California, U.S.A., 90248. By phone: (213) 327-1010.

<u>PRINTERS</u>	<u>RETAIL</u>	<u>8" COMPLETE DRIVES (40 lbs.)</u>	<u>RETAIL</u>
MS-204-132/P* - 25 lbs.	795.00	MS-800/SS1*	995.00
MS-204-132/S	795.00	MS-800/SS11	1395.00
MS-1400/P - 35 lbs.	1195.00	MS-800/DS1	1195.00
MS-1400/S	1195.00	MS-800/DS11	1795.00
MS-SW/25P	1795.00 (Serial: \$70 Extra)	<u>CONTROLLER CARDS (3 lbs.)</u>	
MS-SW/45P	2395.00 (Serial: \$70 Extra)	SVA/SS	400.00
Tractor	225.00	SVA/DS	470.00
<u>5¼" BARE DRIVES (5 lbs.)</u>		APPLE I/O CARD & CABLE for MS-204-132/P PRINTER	75.00
B-51	269.95		
B-52	347.50	<u>CABLES (1 lb.)</u>	
B-91	397.50	MS-80 2-DRIVE	24.50
B-92	487.50	4-DRIVE	34.50
<u>5¼" COMPLETE DRIVES (8.5 lbs.)</u>		MS-800 2-DRIVE	39.95
MS-80/SS*	395.00	4-DRIVE	49.95
MS-80/DS	495.00	MS-204 INTERFACE CABLE	34.50
MS-80-80/SS	549.00		
MS-80-160/DS	749.00		
<u>8" BARE DRIVES (15 lbs.)</u>			
SA-801R	479.95		
MFE-DS/DD	625.00		

\*KEY TO PRODUCT CODES: /SS=Single Sided; /DS=Double Sided; /SS11=Two Single Sided Drives  
Printer Code: /P=Parallel; /S=Serial.

# TRS-80\* Owners

**SAVE ON OFF-THE-SHELF MS-80 MINI DISK SYSTEM.**



## HERE'S WHAT YOU GET:

The MS-80 add-on drives plug right into the TRS-80 expansion unit. Each add-on drive includes: One minifloppy disk drive, case, power supply, and regulator board.

## MORE STORAGE CAPACITY

40 tracks versus 35. Increases your usable storage capacity 23% from 55,000 to 67,800 bytes on the first drive.

## FASTEST ACCESS

The Matchless MS-80's exclusive band-positioning design sets an industry standard for fast and accurate positioning. Track to track access time is only five (5) milliseconds, which is more than twice as fast as the nearest competitor.

## DOES NOT VOID TRS-80 WARRANTY

The MS-80 has a 90-day warranty on labor, a *full year* on parts. Moreover, the MS-80 is completely compatible with the TRS-80 DOS. The MS-80 truly is the Cadillac of the TRS-80 add-ons.

## SHIPPED TO YOU READY TO RUN

Simply take it out of the box, plug it in and you're ready to run.

## ASK ABOUT OUR PRINTERS & SOFTWARE

Dealers Inquiries Welcome

\*TRS-80 is a Radio Shack product.

## TYPICAL QUESTIONS AND ANSWERS:

- Q. Your drive has 40 tracks. The Radio Shack DOS is only 35. How can I use your drive with their 35-track DOS?
- A. Ours is 40, but the additional 5 tracks are the inner portion of the diskette. All Radio Shack Software is completely compatible.
- Q. Can I mix your drives with Radio Shack drives?
- A. Yes! You can mix and match in any sequence or position.
- Q. Can I read a diskette made on a Radio Shack drive, on your drive or vice-versa?
- A. Yes! Our drives are completely compatible with the TRS-80 DOS.

## RELIABILITY SPECIFICATIONS

MTBF .....	10,000 Hours
MTTR .....	0.5 Hour
Media Life .....	3x10 <sup>6</sup> Passes/Track
Design Life .....	5 Years
Preventive Maintenance —	None
Track Density .....	48 TPI
Tracks .....	40
Rotational Speed .....	300 RPM ± 1%
Average Latency .....	100 ms
Transfer Rate: FM Encoding ....	125K Bits/Sec
Access:	
Track to Track .....	5 ms
Average .....	75 ms
Settle .....	15 ms
Head Load Time .....	35 ms
Power Up Delay .....	1 Sec

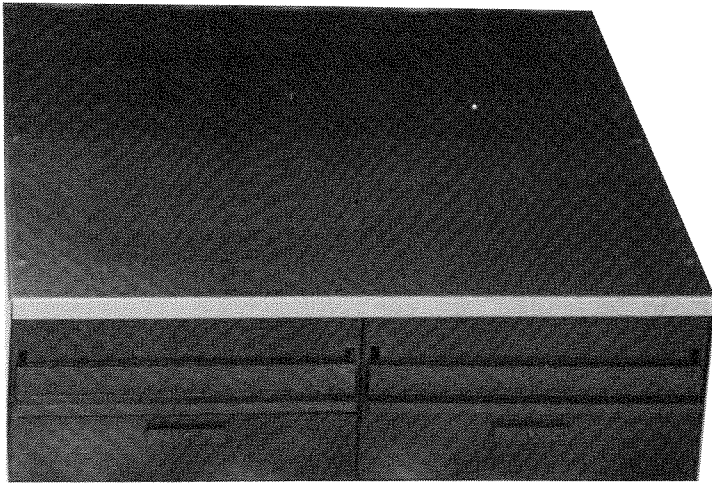
# MATCHLESS SYSTEMS

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# MS-800

FOR APPLE, TRS-80 MOD II or S-100

Call For Details



MS-800 increases the APPLE computer's on line storage capacity under APPLE DOS to one Megabyte using industry standard 8-inch floppy disk drives. File size can be more than doubled, expanding the capability of business software already available for the APPLE and making other serious applications more viable. Any software currently running under APPLE DOS 3.1 or 3.2 will run with the MS-800.

MS-800 consists of case, power supply and drive(s). Ready to run when coupled to an intelligent controller card and the familiar APPLE DOS operating system.

## FEATURES

- Operates with APPLE DOS Operating System 3.1 or 3.2.
- Does not obsolete mini-disks, instead it expands the user's systems to greater capabilities.
- Storage capacity of one million bytes on line (4 Drives)
  - Individual files under APPLE DOS may be more than twice as large as available with mini-disks.
- High reliability through the use of mature technology
  - Industry standard 8-inch Floppy Drives
  - 1771 LSI Controller Chip
- High speed data transfer rate of 256K bits per second.
- Maximizes the scope of your 48K APPLE.
- Drives are powered independently of the APPLE.
- Completely assembled and tested.

## SPECIFICATIONS

PARAMETER	DESCRIPTION
SOFTWARE:	Supports APPLE DOS versions 3.1 and 3.2. Future options will include an advanced program development system.
HARDWARE:	48K APPLE II Optional Controller Card Resides in Slot 7
BOOTSTRAP LOADER METHOD:	The peripheral is booted in the same manner as the mini-disks via a 1K by 8 PROM located on the controller card.
DISK DRIVE:	Industry standard 8-inch floppy disk drive (SHUGART SA800 or Equivalent)
ACCESS TIME:	
Track to Track	10 MS
Average	260 MS
Settling Time	8 MS
Head Load Time	35 MS
CAPACITY:	77 TRACKS 26 SECTORS/TRACK 128 BYTES/SECTOR 256, 256 BYTES TOTAL (2.2) Times the capacity of the Mini-Disks)
DATA TRANSFER RATE:	256,000 Bits per second (1.6 times the mini-disks transfer rate)
PHYSICAL DIMENSIONS:	Controller Card — 9" x 2.75" (Fits inside the APPLE II) Drive — 19" x 5.75"
CONTROLLER CAPACITY:	4 Drives under APPLE DOS 3.1 or 3.2 Maximum of 1 Megabyte on line

# MATCHLESS SYSTEMS

The More-Quality-Per-Dollar People  
Apple II is an Apple Computer, Inc. product.

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NEW . . . from MATCHLESS

## MS-1400 WIDE-PAPER PRINTER



The MS-1400 has the same high quality as the MS-204. And if bigger is better, then the 1400 may be what you're looking for. That's because it'll take forms all the way up to 15½ inches. What's more, it's priced right:

**\$1195.**

### SPECIFICATIONS

#### PRINT FEATURES

Print Speed:	125 CPS at 50/60Hz
Thruput Speed:	40 LPM for bi-directional printing version
Form Feed Speed:	10 LPS
Character Format:	9x7 Dot-Matrix
Character Sets:	U.S.A. (94ASCII), U.K., Germany, Sweden, Japan (JIS)
Character Spacing:	Normal Width: 10 CPI (136)
(Max No. of Columns per Line)	Double Width: 5 CPI (68)
Print Direction:	Bi-directional
Line Spacing:	6 LPI
Vertical Format Unit (VFU)	Maximum no. of lines: 66 or 72
	Total no. of Channels: 6

#### FORMS

Width:	4.5 ~ 15.5"
Total Thickness:	0.05 ~ 0.28mm (0.002 ~ 0.011")
Number of Copies:	Original + 2 copies nominal

#### FORM FEED

Method:	Sprocket Feed
Form Loading:	Possible from either bottom or rear

#### INKED RIBBON

Type:	For dot-matrix impact printer
Width:	13mm (0.5 in.)
Length:	11m (36 ft.)
Color:	Purple or black

#### INTERFACE

Data Entry:	7-bit Parallel (8-bit switch selectable for Japanese characters).
Control Signals:	ACK, BUSY, SELECT, PE, DATA STB, INPUT PRIME, FAULT, INPUT BUSY, (+5VDC).
Control Codes:	CR, LF, VT, FF, CAN, SO, SI, (DEL), DC1, DC2, DC3, DC4, GS, RS, US
Character Buffer:	One Line (136 bytes)
Signal Level:	TTL Compatible
Connector:	Amphenol 5730360, JPN amp 552742-1 or equiv.

#### OPERATING CONDITIONS

Temperature:	5-40° C (41 ~ 104° F)
Humidity:	10 ~ 80 RH

#### STORAGE CONDITIONS

Temperature:	-25 ~ 60° C (13 ~ 140° F)
Humidity:	0 ~ 90% RH

#### POWER REQUIREMENTS

Standard:	100VAC ± 10%
Options:	115VAC ± 10%
	220VAC ± 10%
Idling:	10W
Printing:	80W

<b>WEIGHT</b>	14.5Kg (31.9 lb.)
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<b>DIMENSIONS</b>	560(W)x188(H)x368(D)mm (22.0x7.4x14.5")
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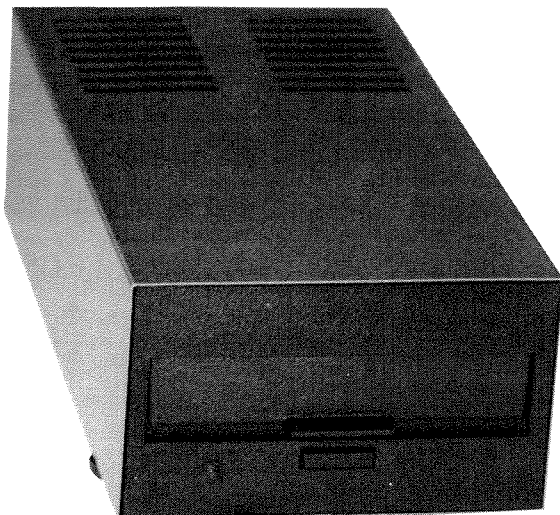
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# 4½ TIMES MORE STORAGE AT UNDER HALF THE COST!



## MS-80/160 Disk Drive

**\$749.00**

Also Available: MS-80/80 - \$549.00

*Compatible With TRS-80, S-100 & Heath H-89*

The MS-80/80 and 80/160 represent a new generation of floppy disk drive technology. Rather than the conventional 35/40 track disk drive (the standard today), at 48 tracks-per-inch the 80/80 or 80/160 is 96 tracks per inch resulting in 80 tracks per side. This allows 2¼ to 4½ times the storage capacity of a conventional floppy.

Because of the track density, 40 track and 80 track diskettes are not compatible. However, the drives themselves can be intermixed on the same system. The MS-80/80 is a single sided 80 track drive. The MS-80/160 is a double sided, dual head drive, with a total of 160 tracks - 4½ times the storage of a conventional drive.

Software patch is available for Radio Shack software that modifies the TRS-DOS from 35 tracks to 80. Apparat NEWDOS-80 allows the user to specify the number of tracks each individual disk drive has. Example: With NEWDOS-80 you can specify drive 0 to be 35-track Radio Shack drive, drive 1 a 40-track Matchless MS-80, drive 2 a 77-track Micropolis, and drive 3 an 80-track MS-80/80.

The MS-80/160 is configured to look like 2 separate 80-track drives, each side being a separate drive.

### Features:

- Includes 5¼" disk drive, case, power supply, regulator board and EXTENDER CABLE. Extender Cable allows drives to be placed in any order easily — no more disassembly required!
- 80 Tracks per side.
- Can be used with or without Radio Shack drives.
- MS-80/160: (160 tracks)  
4½ Times more storage than Radio Shack.
- MS-80/80: (80 tracks)  
2¼ Times more storage than Radio Shack.
- Shipped ready to run.

Also available:  
Apparat NEWDOS-80  
\$149.00

TRS-80 is a Radio Shack product

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# MS—204 PRINTER

**Compatible with TRS-80, Apple, Pet  
or any other Centronics-type system**

## FEATURES

- Simple and Reliable Print Mechanism
- Low Cost
- 80 Columns, 10 CPI and in Double-Width (5 CPI)
- 125 CPS Bi-directional Printing
- Exceeds  $100 \times 10^6$  Character Average Print Head Life
- Continuous Print Duty
- Sprocket Feed
- Variable Forms Width, 4.5" ~ 9.5"
- Rear and Bottom Paper Entry
- 7-Bit Parallel Interface
- 96 ASCII Characters in 5 x 7 Matrix Font
- One-Line Data Buffer
- Built-in Self-Test
- Electronic Vertical Format Unit (VFU)
- Selectable Print and Feed Modes

The Model LP-80 is a self-contained, 7-bit parallel interface, 80-column, dot-matrix printer. The printer employs a print mechanism of extremely simple design and high reliability to achieve its superior performance at a low cost.

## PRINT HEAD

The (**continuous-duty**) print head incorporates jeweled bearings and seven print wires. The expected life of the head is 100 million characters.

## PAPER FEED

The sprocket paper-feed mechanism accepts max. 9.5"-wide multi-ply pin-feed paper. The pin-to-pin distance is continuously adjustable from 4" to 9". Paper can be loaded either from the bottom or the rear. The form position is vertically adjustable to set a correct print line position. Line feed may take place manually, or by depressing the LF push-switch, or by line feed action codes to be entered through the data channels.

## INTERFACE

Data entry is made in a 7-bit parallel, character serial mode at a maximum rate of more than 1,000 characters per second. Data bits are strobed in by externally generated strobe signals. The printer generates acknowledge, busy, paper empty, fault, input-busy, and select signals to report to an external host processor. Those signals signify the status of the printer such as the printer is ready to accept data or a command, the printer is performing previously issued commands, the paper is about to run out, the printer is in faulty status, the printer is receiving data, the printer is selected, or the data buffer is full. The 36-pin Amphenol connector, its pin assignment, all character and control codes, and control signals of the printer are Centronics compatible. Signal levels are TTL compatible.

## CHARACTER FORMAT

96 ASCII characters are printable in both normal-width and double-width.

## DATA BUFFER

One-line (80 bytes) buffer is incorporated.

## BUILT-IN SELF-TEST

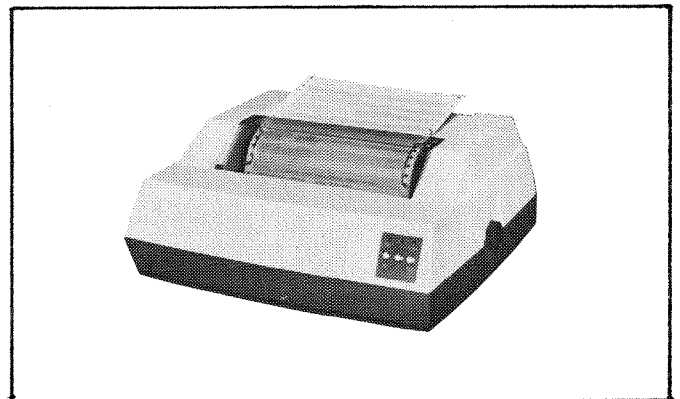
The printer provides a self-test print capability to test its basic logic, electrical, and mechanical functions.

## VERTICAL FORMAT UNIT (VFU)

A 12-channel electronic VFU is employed. Loading of the VFU memory is performed through the data channels. A factory pre-programmed format is also provided.

## PAPER EMPTY DETECTOR

When the paper is about to run out, printing is inhibited. The operator may override it and continue printing.



• More details will be provided upon request.

ALL OF THE FEATURES, SPECIFICATIONS, AND DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE

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## SPECIFICATIONS

<b>PRINT FEATURES</b>	Print Speed: Throughput Print Speed: Printable Width: Character Size:  Number of Columns:  Line Spacing:	125 CPS 63 LPM 8.0" Normal Width 0.08"W x 0.116"H Double Width 0.16"W x 0.116"H  40 66 80 132  1/6" (6 LPI)
<b>FORM FEED</b>	Method: Slew Speed: Form Loading:	Pin Feed 10 LPS Possible from either bottom or rear
<b>FORMS</b>	Type: Width: Hole Dia.: Hole-to-Hole Dimensions:  Form Thickness:	Pin-feed type 25" ~ 95" including sprocket margins 5/32" 0.5" longitudinally 4.0" ~ 9.0" laterally (adjustable) Total 0.011" max. Original + 2 copies nominal
<b>INKED RIBBON</b> (Sample only supplied)	Type: Width: Length: Spool:	For dot-matrix printer 13mm (1/2") 11m (36 ft.) Non-cartridge type
<b>INTERFACE</b>	Method: Connector:  Control Signals:  Control Codes (ASCII):	7-bit parallel 36-pin Amphenol (DDK) 57-40360 (Mating connector, 57-30360, not provided) <u>ACKNOWLEDGE, BUSY, SELECT, DATA STROBE,</u> <u>INPUT PRIME, FAULT, INPUT BUSY, PAPER EMPTY</u> CR, LF, VT, FF, CAN, SO, SI, DC1, DC3, GS, RS, US
<b>SELECTABLE INTERFACE MODE</b>	<ul style="list-style-type: none"> <li>• SO/SI or SO only</li> <li>• Non-Auto Line Feed or Auto Line Feed on CR</li> <li>• Non-Printing or Printing on LF, VT, and FF</li> </ul>	
<b>VERTICAL FORMAT UNIT (VFU)</b>	Max. Number of Lines: Number of Total Channels: TOF Setting: VT Setting: BOF Setting:	66 or 72 6 by Ch. 1 by Ch. 2 ~ Ch. 6 by C. 1 & 2
<b>CHARACTER FORMAT</b>	96 chara. ASCII, 9 x 7 dot-matrix inn normal width, and double width	
<b>CHARACTER BUFFER</b>	1 line (132 chara. in normal width, 66 chara. in double width)	
<b>SWITCHES AND INDICATORS</b>	External Switch . . . . . Switches on Front Panel . . . . .  Internal Selector Switches . . . . .  Internal Limit Switches . . . . . Indicators on Front Panel . . . . .	<ul style="list-style-type: none"> <li>• Power On-Off</li> <li>• Select-Deselect</li> <li>• Line Feed</li> <li>• Top of Form</li> <li>• Print Direction (↔ or →)</li> <li>• SO/SI or SO only</li> <li>• Non-Auto LF or Auto LF on CR code</li> <li>• Non-Printing or Printing on LF, VT, FF codes</li> <li>• Line 65 or 66 for BOF of Preset VFU</li> <li>• Paper Empty</li> <li>• Case Cover Interlock</li> <li>• Power On-Off</li> <li>• Select-Deselect</li> <li>• Paper Empty</li> </ul>
<b>PRINT HEAD LIFE (AVERAGE)</b>	Exceeds 100 x 10 <sup>6</sup> characters	
<b>OPERATING CONDITIONS</b>	Temperature: Humidity:	5° ~ 35°C (41° ~ 95°F) 10 ~ 80% RH
<b>STORAGE CONDITIONS</b>	Temperature: Humidity:	-25° ~ 60°C (-13° ~ 140°F) 0 ~ 90% RH
<b>POWER REQUIREMENTS</b>	Standard: Options:	115 VAC ±10%, 60 Hz; 100W operating, 7W stand-by 100 VAC ±10%, 50/60 Hz, or 220 VAC ±10%, 50 Hz, or 240 VAC ±10%, 50 Hz; 100W operating, 7W stand-by
<b>DIMENSIONS</b>	449W x 375D x 185Hmm (17.7 x 14.8 x 7.3")	
<b>WEIGHT</b>	10kg (22 lbs.)	



# STARWRITER DAISY WHEEL PRINTER



\$1795 (25 cps)

\$2395 (45 cps)

With a print speed of 25 cps, the Starwriter incorporates the latest LSI technology and employs an industry-standard 96-character print wheel -- an easy-to-change format that readily accommodates multi-lingual applications. Starwriters produce letter-quality printing on three sharp copies with either 136 columns in pica pitch or 163 columns in elite pitch. The Starwriter also offers the highest degree of vertical and horizontal placement, resulting in higher resolution than competitive models.

They also feature self-test capability, programmable VFU (vertical format unit) and front panel indicator lamps for paper, select and power status, are compatible with sheet-feeders and can handle up to 15 inches wide.

- Logic seeking
- 136 printable columns
- 96 print characters
- Standard 96 character Diablo wheel
- 25 CPS printspeed
- 40 msec. line feed time
- 381mm (15") maximum paper width
- Uses standard Diablo ribbon
- 1/120 inch minimum character spacing
- 1/48 inch minimum line spacing
- 1000 msec return time
- Standard parallel or RS232-C\* compatible
- 115V±10%, 50/60 Hz, 70 W power requirements

\*Add \$70.00 for Serial

*DEALER INQUIRIES WELCOME!*

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