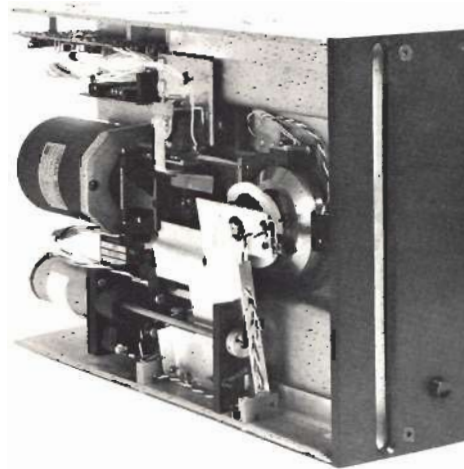# PerSci Model 70 Diskette Drive

A Fully Compatible Memory Device

The PerSci Model 70 Diskette Drive is a mini-size, low cost, random access memory device that records and retrieves data on a removable, flexible diskette. Ideal for a wide range of applications, this versatile unit provides data storage capacity of up to 3.2 Mbits single density unformatted or 6.4 Mbits double density unformatted. The unit will handle data in IBM 3740 format or selectable hard and soft sectored formats.

The Model 70 incorporates many design features previously unique to large disk technology which result in unexcelled reliability and performance, smallest size and fast access to data. And, while offering the advantages of all DC power, the Model 70 is fully compatible with existing stepper motor diskette systems.

A New Generation in Diskette Drive Design

Voice coil positioning speeds access times by 5-7 times over other available diskette drives and makes possible a full stroke 76 track seek in 100 ms. Track to track access is 10 ms and average seek is 33 ms. Unlike stepper motor drives there is no head settling time to add to these times. The advanced design and accuracy of the positioning system will permit easy conversion to double track density operation.

All DC direct drive motor with a closed loop feedback servo insures accurate rotational speed of the diskette. Because no AC power is used in the drive, no modification is required for use in foreign countries.

Fully automatic, electric diskette load and unload, and LED sensors which signal if the diskette has not been correctly loaded, assure simple accurate diskette insertion and positioning and eliminate the possibility of diskette damage. The unload function can be engaged and disengaged from the computer permitting remote control operation.

Power consumption is 24 watts, one quarter of the power required by other drives. Heat dissipation is only 82 BTU/hr, eliminating the need for a cooling fan. This feature, plus a low ambient noise motor, results in noiseless operation.

Small size of the Model 70, only 8.56" x 3.38" x 13.75", permits mounting of five units vertically or two units horizontally in a 19" rack.

PerSci Model 70
Diskette Drive – Specifications

Capacity

Unformatted
  Per diskette: 3.2 Mbits/400 Kbytes
  Per track: 41.7 Kbits/5 Kbytes
3740 Format
  Per Diskette: 1.9 Mbits/243 Kbytes
  Per track: 26.6 Kbits/3.3 Kbytes
  Per sector: 1024 bits/128 bytes
Double Density (Optional)
  Per diskette: 6.4 Mbits/800 Kbytes
  Per track: 83.4 Kbits/10 Kbytes

Track Density

48 tracks per inch
(data track width .012")

Bit Density

Single density 3268 bits per inch
Double density 6536 bits per inch

Rotational Speed

360 RPM ± 7 RPM

Transfer Rate

Single density 250 kilobits per second
Double density (optional) 500 kilobits
  per second

Operating Times

Track to track access: 10 msec.
Head settle time: 0 msec.
Random average seek: 33 msec.
76 track seek: 100 msec.
Head engage: 40 msec.
Motor start (after DC power applied): 1 sec.

Media

IBM 3740 diskette or PerSci
  approved equivalent

Physical Dimensions

Height 8.56" x width 3.38" x depth 13.75"
Weight 15 lbs.

Positioning Mechanism

Linear voice coil motor

Operating Environment

50°F to 120°F
8 to 80% relative humidity

Power Requirements

+ 5 volts DC 4.0 Amps.
Alternately: + 5 V @ 2.0 Amps.
                    plus
              + 5 V unreg. @ 2.0 Amps.
− 5 to − 15 volts DC .14 Amp.
+ 24 volts DC .46 Amp.

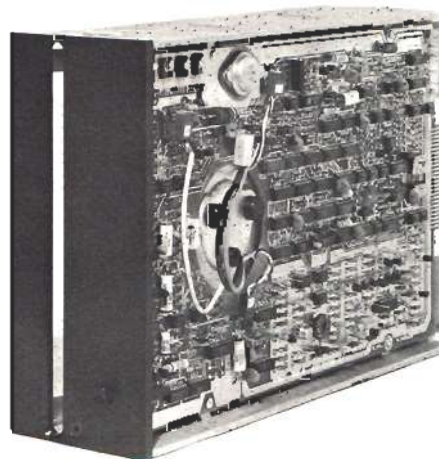### Power Consumption

24 watts DC

Heat Dissipation

82 BTU per hour

Reliability

Read error (soft): less than 1 in 10^9 bits
Read error (hard): less than 1 in 10^{12} bits
Positioning error: less than 1 in 10^6 accesses
MTBF: more than 4000 hours
MTTR: less than 20 minutes
Device Life: 5 years or 15,000 hours, whichever
  occurs first

Available Options

Double density recording
Motorized diskette load and unload
Remote diskette ejection
Dual side recording
High performance option kit
Write protect
Index/sector separation
Sector countdown
Interface controlled spindle motor enable
Phase locked data separator
− 12 V or − 15 V power alternates for − 5 V

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PerSci

Peripherals a
Generation Ahead