

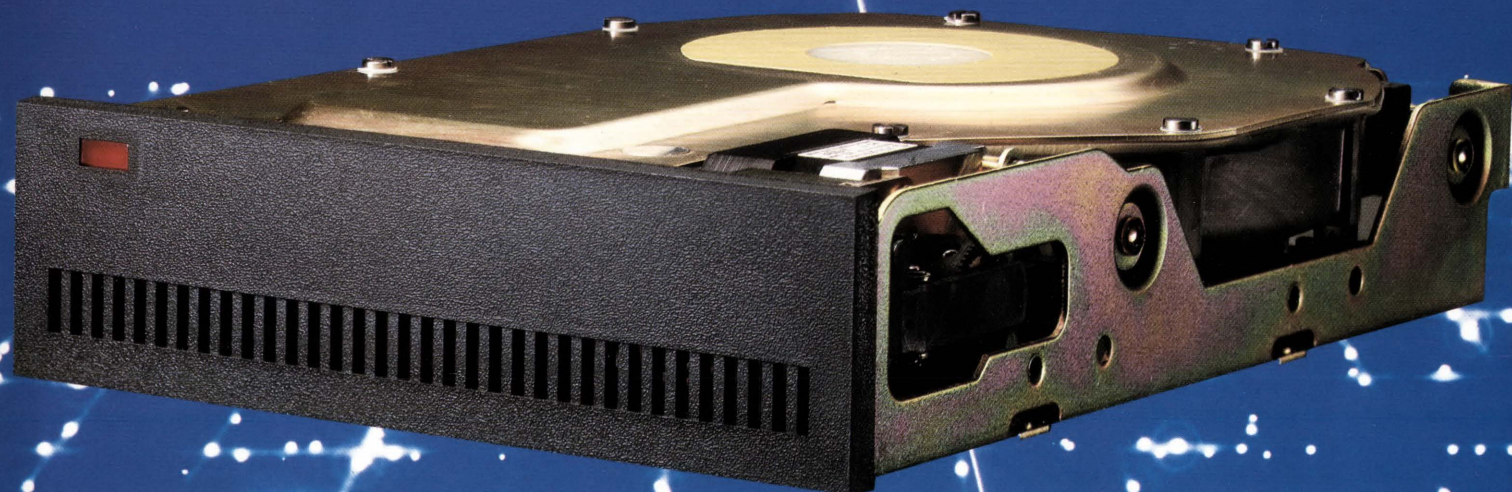
TEAC[®]

MAY 22 1985

SD-510

Half-Height 5-1/4 Inch Hard Disk Drive

- At 41 mm (1.64 inches) half the height of conventional 5-1/4" hard disk drives
- Data storage capacity of 10 MBytes formatted, 12.76 MBytes unformatted
- 3 msec track-to-track data access time
- New custom LSIs improve reliability
- Easy interfacing to a variety of equipment



A high-speed, high-capacity hard disk drive with TEAC capability

Expanded Flexibility with a 41 mm Half-Height Drive

The SD-510 is the perfect answer to today's demand for more compact computer peripherals. This slim 41 mm drive, half the height of existing drives, will contribute to overall system space savings. Two drives may be used in place of one conventionally-sized drive for a doubling of available data storage capacity. And the external memory system can be further enhanced with the addition of the unique TEAC MT-2ST cassette streamer as a backup memory, to expand the flexibility and the range of applications of your system.

Big 12.76 MByte Memory

The SD-510 uses two 5-1/4" disks as the memory storage medium. Its unformatted data storage capacity is up to 12.76 MBytes; formatted the SD-510 still provides a full 10 MB. With a system incorporating the MT-2ST, a vast capacity for expansion of your data storage capacity is available.

A Drive Mechanism You Can Always Count On

The SD-510's spindle motor—the heart of the rotating mechanism—is a slim brushless direct drive motor. Rotational accuracy is guaranteed by the use of a quartz oscillator digital servo, for consistently accurate rotation despite temperature or voltage

fluctuations. This brushless motor is exceptionally durable as well, so that maintenance or replacement are almost never necessary. The SD-510 offers you comforting long-term high-reliability even with continuous use.

High-Speed Data Transfer

The SD-510 has a data transfer rate of 5 megabits/sec. This is about 20 times the speed of a 5-1/4" floppy disk. Data transfer between the drive and the cassette streamer is also fast, contributing to an overall capacity for rapid data transfer across a system.

Ultra-Clean Air Cooling

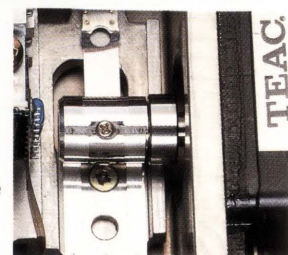
The heads and disk are mounted in a tightly-sealed diecast aluminum container to protect them against dust contamination. This container is fitted with an air filter to ensure that a normal flow of air is maintained, protecting the heads and disk against temperature fluctuations. The head and disk unit is also protected from heat radiated by the motor through a configuration which maintains a stable temperature within the drive. This leads to substantial reductions in tracking errors, and makes it possible to initiate read/write operations as soon as the power is turned on.

Fast, Accurate Repositioning

The head positioner uses a band ac-

tuator with a stepping motor. The band actuator is mounted inside the head/disk assembly to protect it from heat and dust, and positions the heads to extremely fine tolerances. Track-to-track access time is a rapid 3 msec.

The SD-510 is also equipped with a high-speed seek mode, made possible by the exceptional speed of the





Improved Circuit Reliability

The SD-510 now contains custom TEAC LSIs and numerous chips, a development which offers a number of strategic advantages over and above size reduction.

Circuitry has been simplified and the number of parts reduced:

this means gains in both reliability and cost efficiency, as the need for maintenance and parts replacement is virtually eliminated. The power unit is fitted with

current remitter circuitry, so that only the minimum power necessary is used on powering up. This cuts power consumption, allows operation even when current is weak, and reduces heat radiation.

Multi-function Interfacing

The SD-510 interface is designed to allow the drive to be adapted to a wide variety of applications. There are two models, the 00 and the 01. The 00 model is fully compatible with TEAC's SD-412, but two units can be fitted into the space occupied by a single SD-412. The 01 model incorporates the TEAC original auto shipping lock. The SD-510 is also available as a full-height version, with only the front bezel changed. The full-height version has adequate space for the installation of a controller, thus opening up a wide range of system design potentialities. The SD-510 can be substituted for a mini-floppy disk drive external memory unit in any micro-computer or office computer system, and can be handled just as easily.

head movement. The speed and accuracy of the seek mode are further enhanced by a built-in micro-processor which controls the input step pulse.

Smooth Start/Stop

The SD-510 has four movable read/write heads, one for each surface of the two disks. The two 130 mm aluminum disks are coated with magnetic oxide particles, and finished with binders and lubricants. This smooth surface is coupled with quality Winchester head technology, and a low load pressure low-inertia flying head. The result? Exceptionally

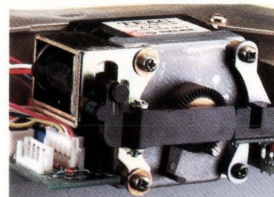
smooth and reliable contact start/stop operation.

Vibration-proof, Shock-proof Shipping Lock

Protection against shocks and transport vibration which could result in damage to the heads or disks is built right into the SD-510.

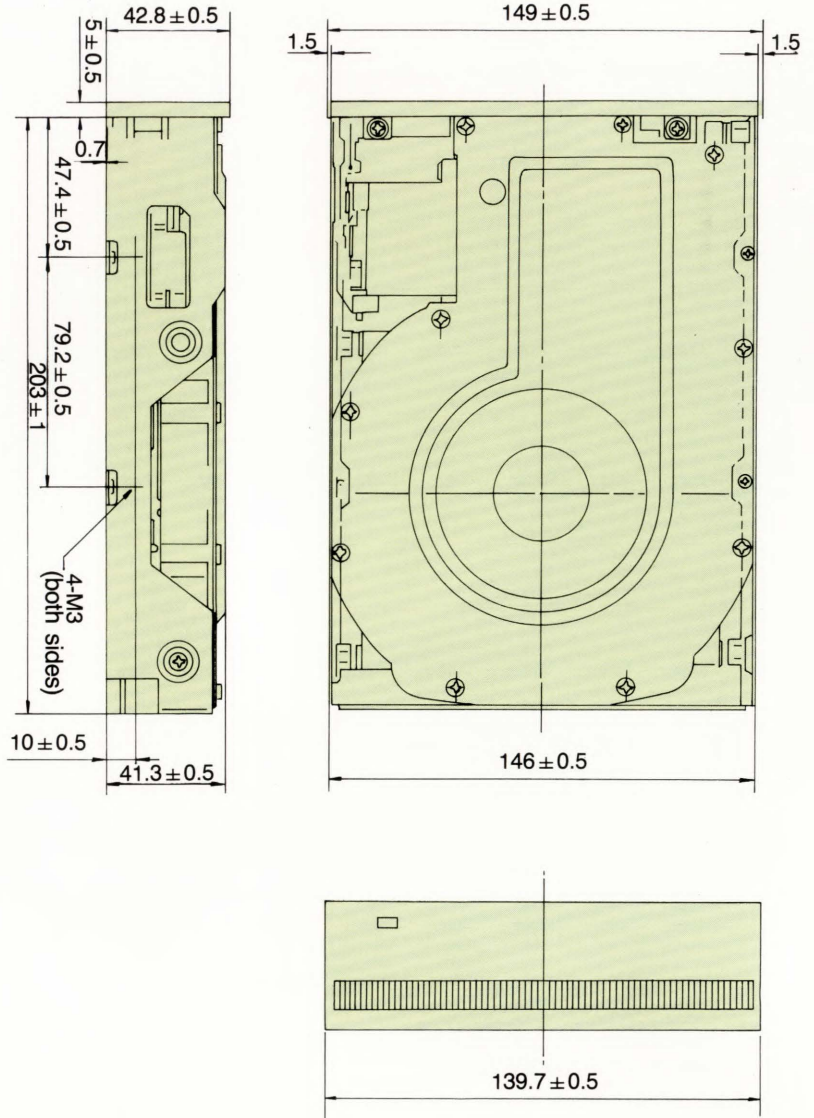
The 01 model incorporates an original TEAC auto-locking system.

When the power is turned off, the read/write heads automatically lock into safe position, and are thus protected against shocks. When the power is turned on, the lock is automatically released.



SPECIFICATIONS

- No. of Disks:** 2
- No. of Surfaces:** 4
- No. of Heads:** 4
- No. of Tracks:** 1224
- Track Density:** 345 tpi
- No. of Cylinders:** 306
- Recording Density:** 9074 bpi max.
- Data Transfer Rate:** 5 megabits/sec.
- Data Recording Capacity**
- Unformatted**
- Per Track:** 10416 bytes
- Per Surface:** 3.19 megabytes
- Per Drive:** 12.76 megabytes
- Formatted (32 sectors/track)**
- Per Sector:** 256 bytes
- Per Track:** 8,192 bytes
- Per Surface:** 2.5 megabytes
- Per Drive:** 10.0 megabytes
- Disk Rotational Speed:** 3600 rpm \pm 1%
- Access Time**
- Track to Track:** 3 msec
- Average:** 65 msec (fast seek mode)
- Maximum:** 190 msec (fast seek mode)
- Settling Time:** 15 msec
- Average Latency:** 8.33 msec
- MTBF:** 11,000 power-on hours, typical usage
- Error Rates**
- Soft Errors:** 1 per 10^{10} bits
- Hard Errors:** 1 per 10^{12} bits (16 retries)
- Seek Errors:** 1 per 10^6 seeks
- Ambient Temperature**
- Operating:** 4 ~ 45°C (40 ~ 113°F)
- Non-Operating:** -40 ~ 60°C (-40 ~ 140°F)
- Relative Humidity:** 8 ~ 80% noncondensing
- Temperature Gradient:** 10°C(40°F)/H
- Power Requirements:**
- +12V \pm 5%, 1.0 A typ., 2.5 A max.
(power-on)
- +5V \pm 5%, 0.8 A typ.
- Dimensions (W \times H \times D):**
- 146 \times 41.3 \times 203 mm (5-3/4" \times 1-5/8" \times 8")
- Weight:** 1.5 kg. (3 lbs. 5 oz.)
- Safety Standard:** Complying with UL and CSA



(Unit: mm)

Features and specifications are subject to change without notice.

TEAC

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