

# MEMOREX

3770  
Disc Cache



COVER: Photomicrograph of Fairchild Camera & Instrument  
Corporation 64K CCD Memory

## Now a better alternative for improved disc performance.

If your 100/200 MB removable disc storage subsystem isn't giving you all the performance you want, Memorex's new 3770 Disc Cache could be just what you need.

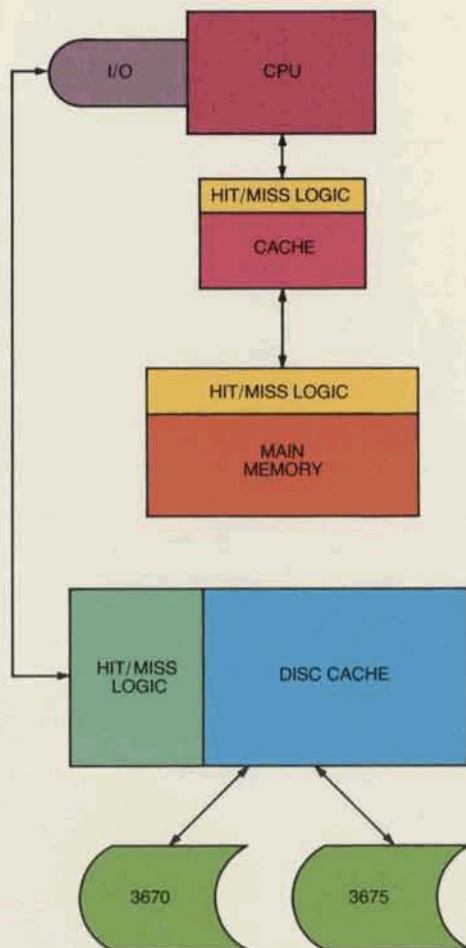
The Memorex 3770, when installed in the proper environment, offers benefits that can result in:

- Significantly reduced CPU time
- Less task switching
- Improved channel efficiency
- Reduced arm contention
- Better time sharing response

The Memorex 3770 Disc Cache also helps control the rising costs of software and personnel. It can eliminate conversion costs and delays which often accompany new disc drives, additional disc systems, or mechanical changes to existing equipment. These non-hardware costs are becoming an ever higher percentage of total data processing expense.

The Memorex 3770 Disc Cache is the best alternative for many users. The 3770 is fully hardware and software compatible. You can install it without operating system or program changes. Improved system performance can be achieved quickly.

The Memorex 3770 Disc Cache—a better alternative for improving your system's performance.



## The Cache Memory Concept—Applied.

The availability of charge-coupled devices (CCDs) and microprocessors has enabled Memorex to offer you a unique combination: cache memory implemented as part of your disc subsystem.

A microprocessor controls a 2-level memory hierarchy within the cache. The microprocessor manages both high-speed RAM and CCDs, providing a data management system capable of significantly increasing I/O efficiency.

The concept of cache memory is well known and accepted. For most applications, certain data elements will be accessed more often than others. An algorithm in the microprocessor assures that this data will be in cache memory for fast access. The microcode of the 3770 also manages the update of the active data in cache and its

subsequent transfer to disc. All I/O requests are intercepted by the cache controller, which is positioned at the head of a disc string. If the requested data is not in the cache, the request is passed through to the disc and the track is then copied into the cache. The algorithm in the microprocessor manages this memory area to give you a high probability for a data request being serviced from cache.

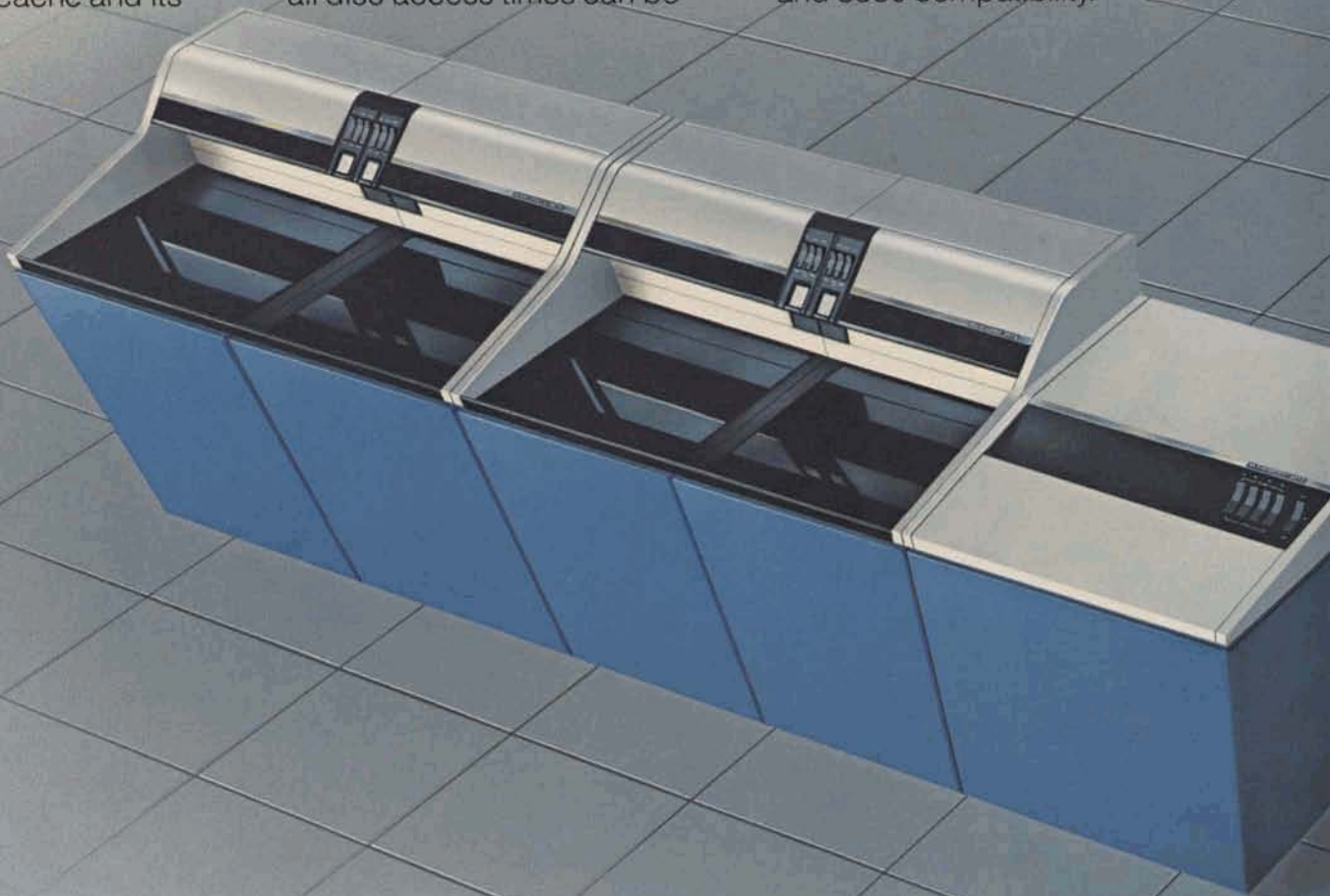
As the percentage of calls serviced from the cache increases, arm contention and average access time for data decrease. Highly active tracks can be retained in cache memory using the optional track lock feature. These tracks will always be available for the system in 2 milliseconds.

This compares with 30 to 50 milliseconds when an access request goes to the disc itself. By eliminating mechanical seek time and rotational delay, overall disc access times can be

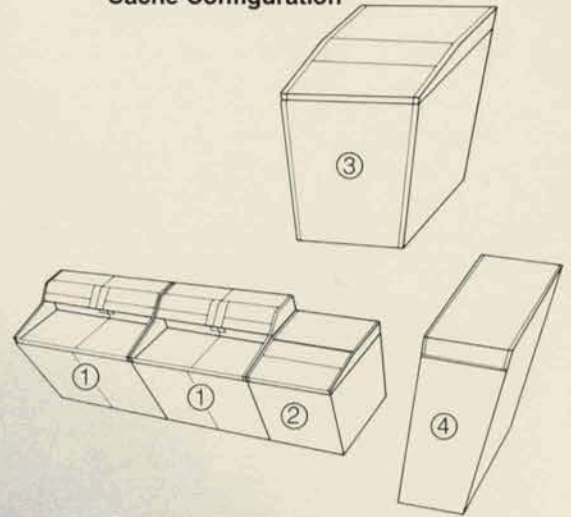
significantly less. RPS missed reconnections and interrupts are reduced. Data requests handled from the cache memory provide a significant improvement in response time and can mean greater system thruput.

Automatic migration of the most recently used data into the higher speed cache memory reduces space management requirements. Containment of the most recently used disc tracks allows access time between main memory and peripheral storage to decrease substantially. Cache data transfers are made at approximately 1.2MB per second, almost 50% faster than standard 3330-type products. This reduces channel and control unit busy time for data transfer by almost one third. I/O wait time for system paging and task switching is less.

Data will get to your users faster. All this is accomplished with the flexibility of removable media and 3330 compatibility.



### Cache Configuration



- ① **3670/3675 Disc Storage Drive.** Up to 8 spindles of 100 and 200 MB drives may be mixed on a string. The 3670/75 drives are functionally equivalent to IBM 3330, Models I and II.
- ② **3673 String Controller.** Contains drive-related control functions. Up to 4 disc modules may be attached in any combination. The 3673 may attach directly to the ISCs and IFAs on System/370.
- ③ **3770 Disc Cache.** Provides up to 6 MB in the first cabinet. Cache access time is 2 MS, operations are totally transparent to the system. The 3770's standard controls allow fine tuning of the string.
- ④ **3674 Storage Control Unit.** Attaches to the Block Multiplexer Channel. In addition to 367x support, it permits attachment of Memorex 3650, 3640 Disc Storage Subsystems and IBM 3350 in mixed configurations. The 3674 is required to operate the 3770 Disc Cache.

## Existing system compatibility with features and options to spare.

The Memorex 3770 Disc Cache is a high speed cache memory for the Memorex 3670/75 Disc Storage Subsystem. It is functionally compatible with all IBM System 370 Model 135 and above, or other compatible CPU's, via the Memorex 3674 Storage Control Unit. With complete hardware and software compatibility, conversion costs and delays are avoided.

SYSTEM/370: 135, 138, 145, 148, 155, 158 165, 168, 3031, 3032, 3033	BLOCK MULTIPLEXER
AMDAHL: 470V/5, 470V/6, 470V/7	
ITEL: AS-4, AS-5, AS-6	
CDC OMEGA: 480	

Physically positioned next to 3673 String Controller, the 3770 Disc Cache operates between the string controller and the drive string. Each string is serviced by one Disc Cache. The 3770 contains 1 MB of cache memory, a cache controller, storage control, flexible disk drive, and room for up to 5 MB of additional CCD memory.

A standard operator panel allows manually controlled "write through" for immediate updating of critical data or "write back" allowing track updates during string idle time. A manual control is included to enable or disable cache for each spindle or the entire string.

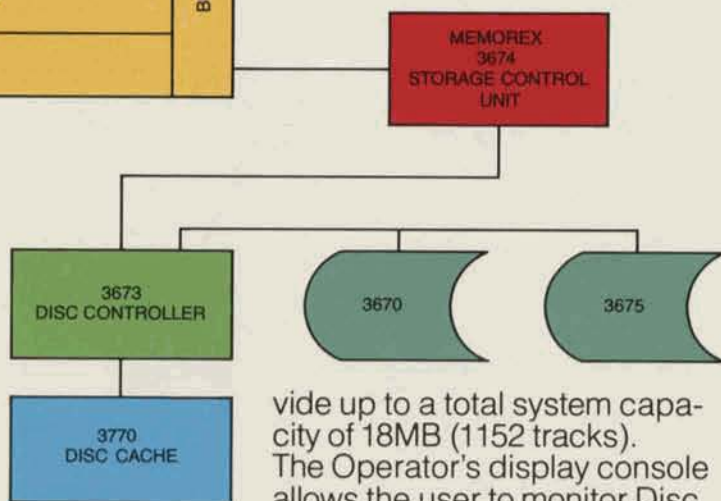
Performance can be further improved by a variety of options. An additional cabinet can pro-



The Memorex 3770 incorporates sophisticated self-diagnostic capabilities which perform on line or off line diagnostics to detect and isolate problems.

Memorex backs the 3770 and all other products with trained field engineers worldwide.

Faster access, greater throughput, increased I/O efficiency, and overall system performance —yours with the Memorex 3770 Disc Cache.



vide up to a total system capacity of 18MB (1152 tracks). The Operator's display console allows the user to monitor Disc Cache status and to control caching from the keyboard to provide fine tuning capability.

An uninterruptible power supply is available to ensure data integrity.

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### **Memorex Corporation—Quality, Value, Service**

Founded in 1961, Memorex employs nearly 10,000 highly skilled people in more than 100 locations throughout the world. With modern headquarters and major manufacturing facilities in Santa Clara, California, Memorex also has production facilities in Liege, Belgium; Nogales, Mexico; Eau Claire, Wisconsin; and Irvine, Santa Ana, and Anaheim, California, plus a network of regional warehousing and distribution centers.

Memorex is a worldwide supplier of high technology equipment and magnetic recording media used in data storage, retrieval and communications. The growing line of products today includes high quality disc, tape and semiconductor data storage systems; telecommunications processors and terminals; computer tape, disc packs and data modules; audio and video tapes; word processing supplies; and field engineering and facilities management services.

