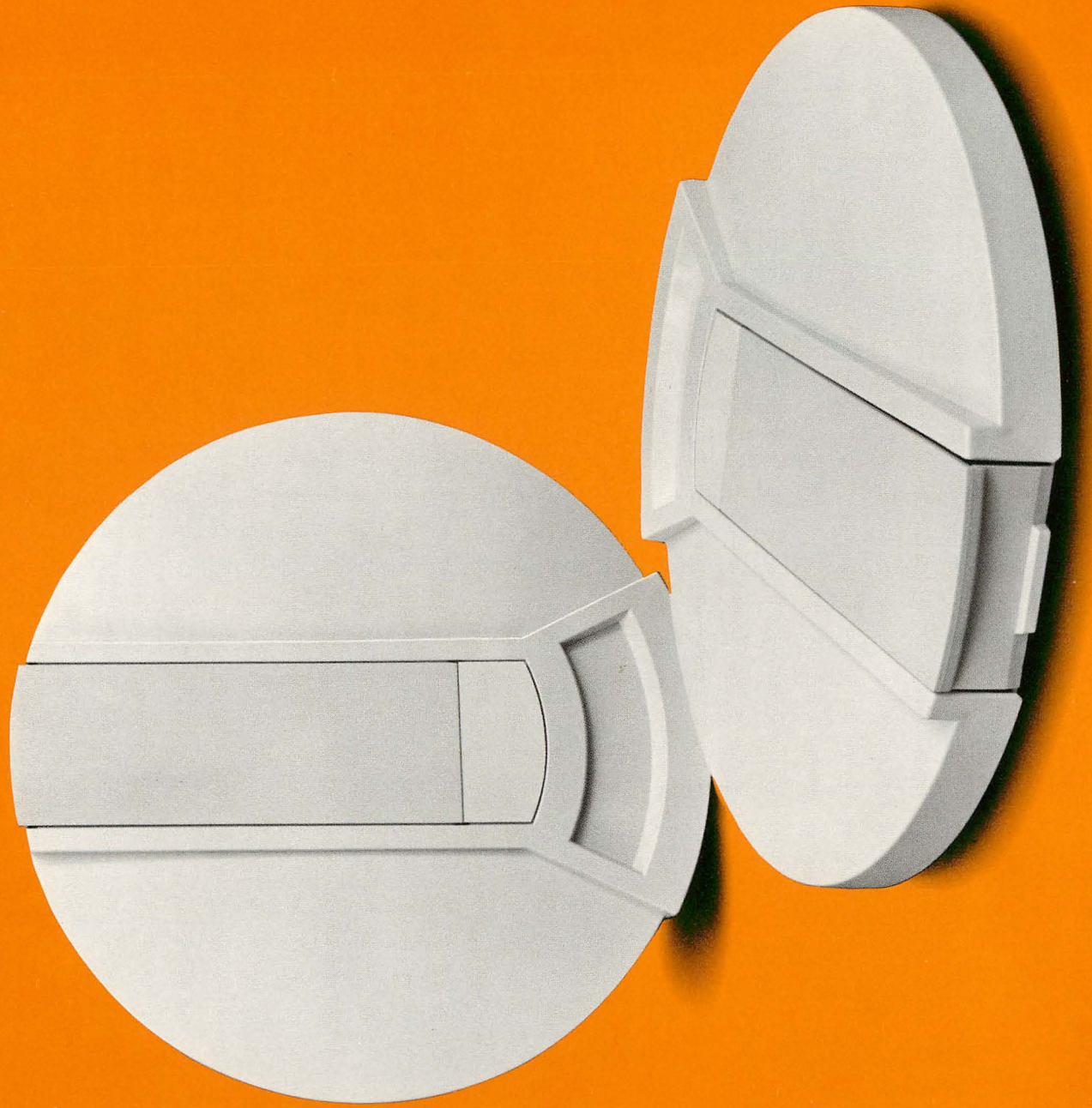
MEMOREX

Front Loading Disc Cartridge



Memorex's New Front Loading Disc Cartridge

Dramatic Design Improvements
Superior Performance and Reliability
Greater Resistance to Contamination

First in a Decade

For more than ten years the basic design for the IBM 2315 type cartridge has remained the same. One disc cartridge looked and performed just like any other, regardless of differing brand names. Inherent problems remained the same, too.

Investigative Research

Early in 1975 Memorex commissioned a team of design engineers to resolve all design problems inherent in the original cartridge. They succeeded beyond their expectations because they approached the task from both OEM and end-user viewpoints. After visiting numerous sites and interviewing countless users, certain design shortcomings became apparent.

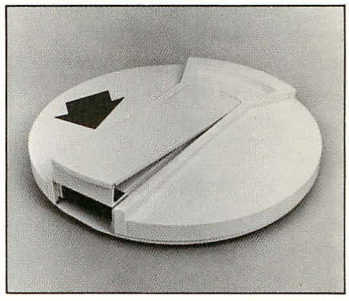
The design engineers learned that conventional 2315 type cartridges work fine at first, but with continued use, problems occur: latch membranes break and fail to seal; doors gradually deform and close improperly; discs become damaged through mishandling; debris flakes from heat staked rivets; the cartridge becomes polluted through non-closure of the door. Additionally, write lock out buttons on conventional cartridges have no fixed detent position and can be improperly set or vibrate out of lockage.

Improvement Upon Improvement

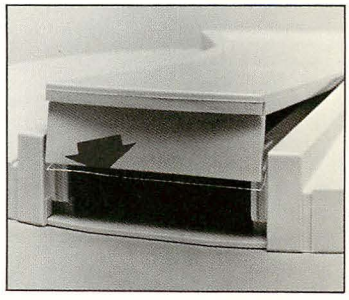
After compiling all their data, Memorex's engineers addressed each conventional design shortcoming from a total systems approach, with improvements leading to more improvements.

Many of these changes were so unique that the new front loading disc cartridge's performance not only overcomes all the weaknesses of conventional designs, but many of its new designs are protected by pending patent application.

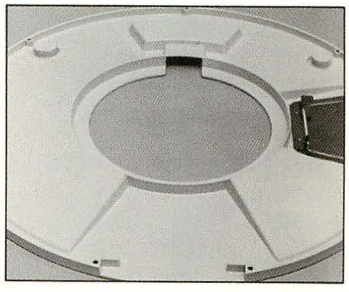
Conventional



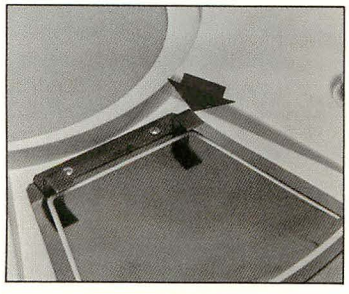
The door is long and subject to distortion. The copper spring that joins the latch to the door is heat staked. The base of the door is flexed each time it is opened.



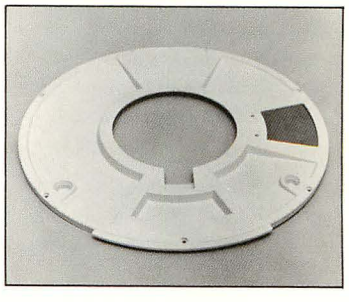
The thin plastic membrane can break or deform after usage. It is affixed to the latch by heat stake rivets which produce flashings that can flake off and become debris.



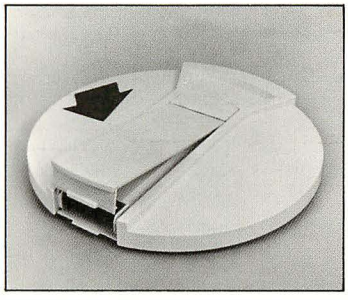
The cartridge has no bosses to keep the disc from sliding or floating during transport or when roughly handled.



The air inlet port and stop are metal against metal and thus, debris prone.

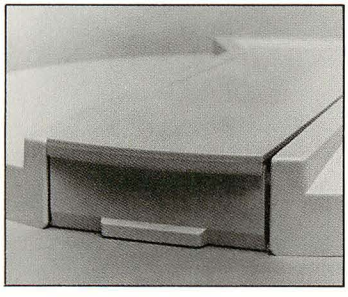


The bottom of the cartridge can flex and distort. Interference with internal parts is possible.

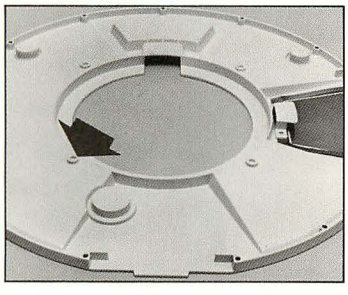


New

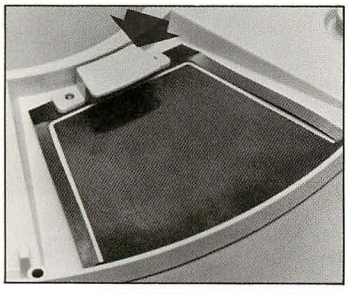
The fiberglass reinforced door is shorter and stronger. It has maximum travel with minimum stress through a positive hinge point; thus flexing, while the door is open, is eliminated. Door and latch are hinged together under spring tension with no heat staking.



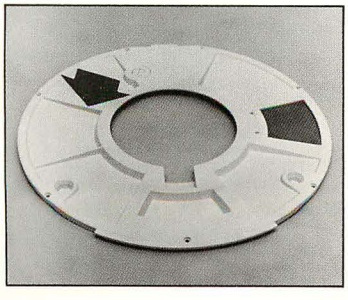
The "lap-butt" latch fits snugly against the latch frame and lower cartridge housing for greater sealing reliability. Instead of heat staking, shafts that go into sockets are used to create spring-tension hinges for more positive sealing. Guide ribs with sloping faces help assure positive closure.



Four internal stability bosses help brace the disc and hub against negligent handling and excessive movement which can result in disc damage and internal debris.



The air inlet port is stopped against a thick polycarbonate "brake" to minimize potential pollution.



The bottom is reinforced with ribs to assure dimensional stability and performance reliability.

Torture Tested Beyond ANSI Standards

Memorex's front loading disc cartridge was subjected to an accelerated ANSI "torture test" to determine life expectancy of the disc cartridge. The cycle consisted of sliding the disc cartridge into a drive receiver, opening the door for operation and then extracting the cartridge. The results were:

Test Unit	Cycles	Door Failure	Latch Failure
Memorex's front loading disc cartridge:	7,600	0	0
Old 2315 type:	4,000	625	686

The test units were then heat-soaked at 140°F, 64% RH for 48 hours, with the head access door held in the full open position. The units were then acclimated for 24 hours at 71°F, 50% RH and inspected for comparison to pretest dimensional head access door height measurements. The results were:

Memorex's front loading disc cartridge:
A *slight* bow condition of 0.0028″ maximum.
Old 2315 type:
A *set* bow condition of 0.3000″ maximum.

Also, vibration tests on Memorex's new cartridge were conducted in accordance with ANSI specifications. After disassembly and inspection, it was noted, "The unit remained intact and functioning properly after test completion."

Write Your Own Specifications

The snap-in logo plate on Memorex's cartridge can be custom labeled by hot stamping, in a multitude of colors, thereby enhancing versatility and flexibility of product image.

In addition, the new cartridge spans the broadest range of specifications in the industry and is compatible with virtually any disc drive that uses 2315 type cartridges.

It can be fitted with various disc specifications ranging from 100* to 400 TPI, 2,200* to 6,060 BPI, 8 to 64 sectors and up to 126 megabit unformatted storage capacity. Also, high-capacity discs feature special "armor tough" surface coating which extends disc durability and overall performance.

Combine Memorex's high-performance discs with our new cartridge housing and you get reliability that has never been available before.

*Standard

Memorex Front Loading
Disc Cartridge

General Specifications

Disc Substrate
Micro-finish aluminum that has been specially processed, heat treated, chemically cleaned and polished to optical smoothness.

Disc Coating
Ferromagnetic oxide suspended in thermo-catalytically crosslinked epoxy binder system.

Coating Thickness
110* microinches at the inside recording diameter. 135 microinches at the outside recording diameter.
50 microinches at the inside recording diameter. 70 microinches at the outside recording diameter.
40 microinches at the inside recording diameter. 60 microinches at the outside recording diameter.
(The above coating thickness specifications depend upon the data packing densities required for the disc drive in the system.)

Bit Density
1100 bits per inch (Depending
2200* bits per inch upon
4040 bits per inch specifications.)
6060 bits per inch

Track Density
100* through 400 tracks per inch are available.

Physical Dimensions
(Including cover.)
Height: 1.37 inches
Diameter: 15.00 inches
Weight: 4.50 pounds (net)
8.00 pounds (shipping)

Disc Information
Number of recording discs: One
Number of recording surfaces: Two
Cover: Tough, durable, unbreakable and non-flammable.

Operating Temperature
60° to 120°F.

Sector Hub
Nickel-plated cast aluminum alloy hub with one index slot; and either 8, 12, 14, 16, 20, 32, 48 or 64 sector slots.

Durability
The smooth, hard disc coating will not chip or peel and is fully capable of error-free data recovery after more than 35,000 head loadings.

*Standard

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9/76 5M MCA4115 PRINTED IN U.S.A.