

Memorex
Computer
Memory



THE COMPUTER HISTORY MUSEUM

1 027 4512 8



**Introduction
Computer Tape
Disc Products
Flexible Discs
Memorex Services**

**Memorex is One of the World's
Leading Suppliers of Information
Storage and Retrieval Products
and Services**

**1/3 of a Billion Dollars
in Annual Sales**



MEMOREX

The Company



Corporate Milestones

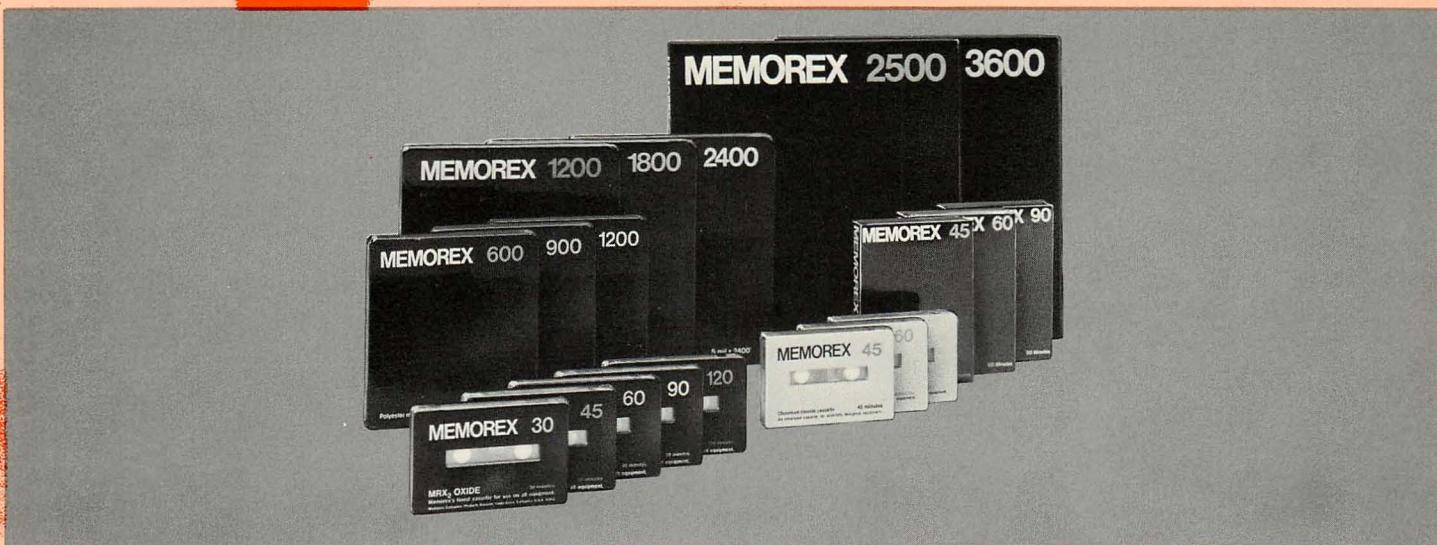


MEMOREX



- 1961 Independent Media Supplier
- 1963 Ultra-Thin Instrumentation Tape
- 1965 Video Tape
- 1966 Third Generation Computer Tape
Independent Supplier of Disc Packs
- 1967 5-Year Guaranteed Disc Pack
- 1969 5-Year Guaranteed Computer Tape
- 1970 Carbon-Backed Computer Tape
- 1972 First Independent to Deliver Flexible Discs
- 1973 Lifetime Guaranteed Computer Tape
Lifetime Guaranteed Disc Packs
Automated Tape Library Management System
- 1974 First Thick Based Computer Tape
Procscan, the Automated Disc Conversion System
Resource, Computer Utilization Evaluator
First Independent Thin Coated Disc for 3336-11
- 1975 First Independent to Market the Data Module
- 1976 First Independent to Re-engineer and Improve Front Loading Disc Cartridge
Dual-Sided and Double-Density Flexible Disc
Tape Error Analysis, Tape Volume and Unit Reliability Evaluator

The Total Media Manufacturer— Data Recording, Storage and Retrieval Products That Complement Each Other



MEMOREX

- 1961 Incorporated**
- 1962 Precision Computer Tape**
- 1963 Broadband Instrumentation Tape**
- 1965-67 International Offices Established**
- 1968 Information Systems**
- 1969 Word Processing Group Established**
- 1970 Consumer Media Products Group Established**
- 1975 Became a Quarter of a Billion Dollar Sales Company**

Media Milestones

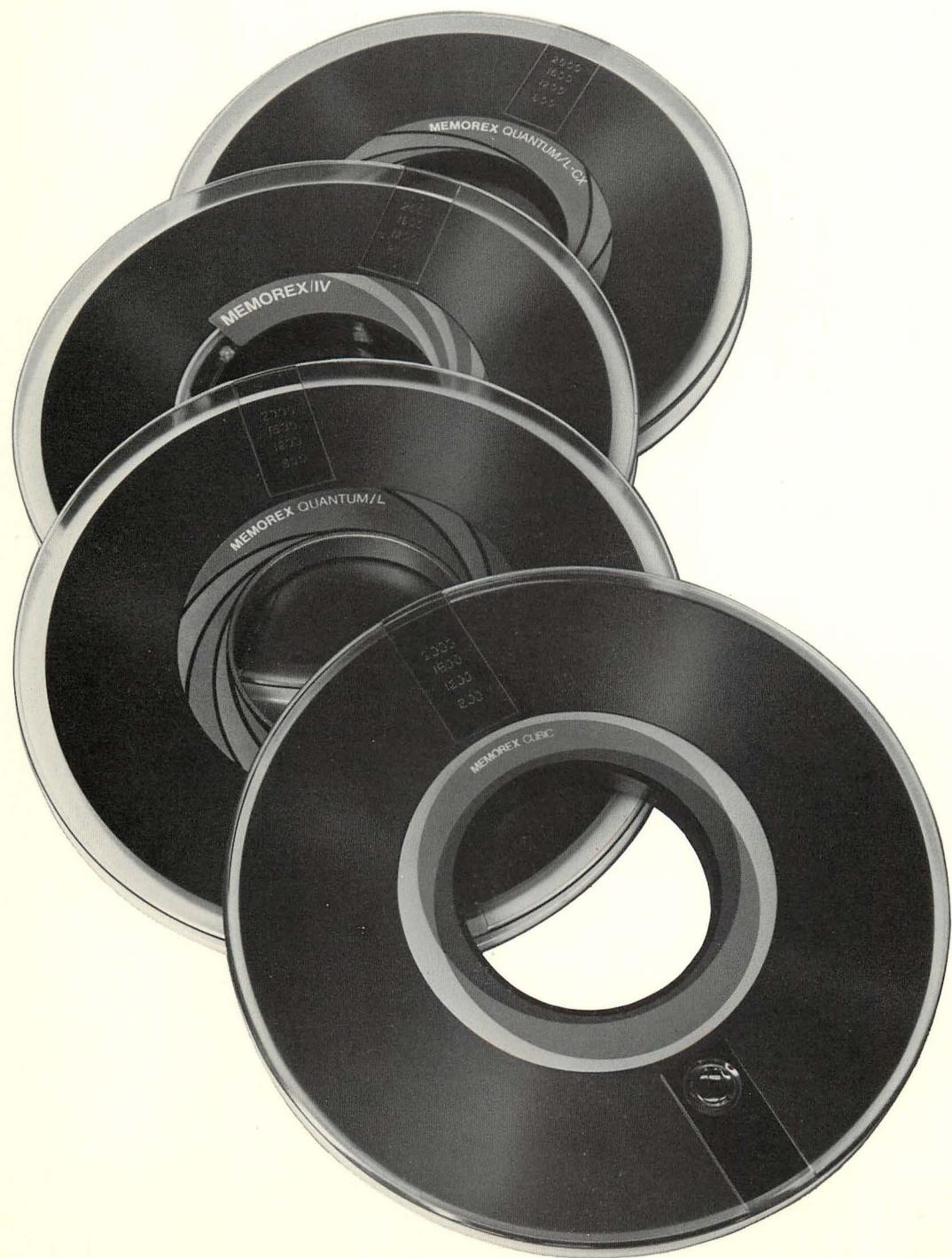


TAB

COMPUTER TAPE

Why More Than One Tape?

MEMOREX



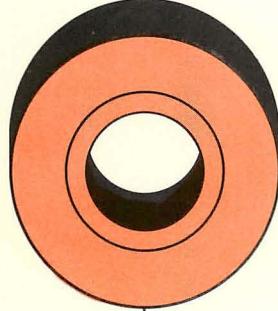
Product Selection

A Memorex Tape for Every Need

Because You Have More Than One Application!

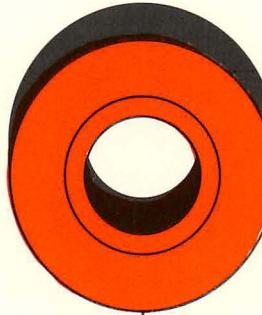
Work Tapes

Memorex/IV



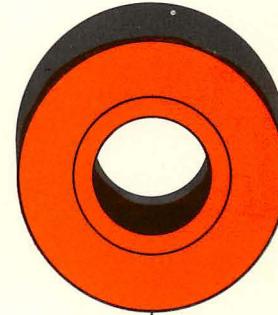
Critical Data

Quantum/L
Quantum/LCX

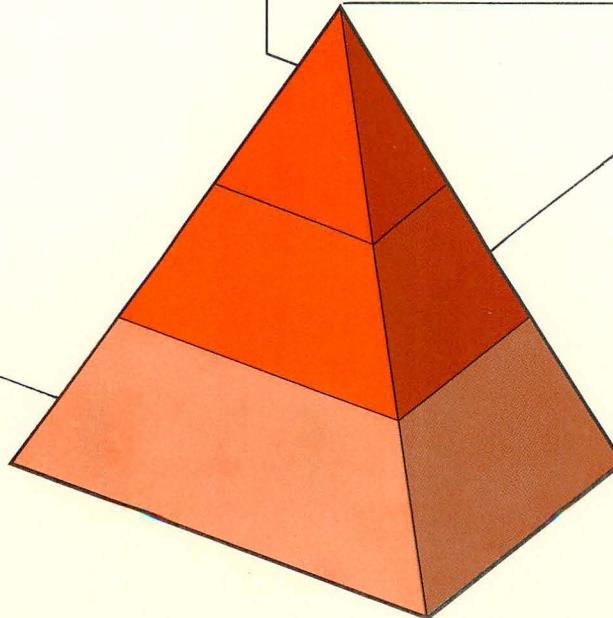


Standard Applications

Cubic



Total
Tape
Library



MEMOREX

To aid you in
the Selection of
the Proper Tape for
Specific Jobs,
we have devised a

Tape Application
Configurator
or

TAC

Product Selection

With your tape requirements over the next twelve months in mind:

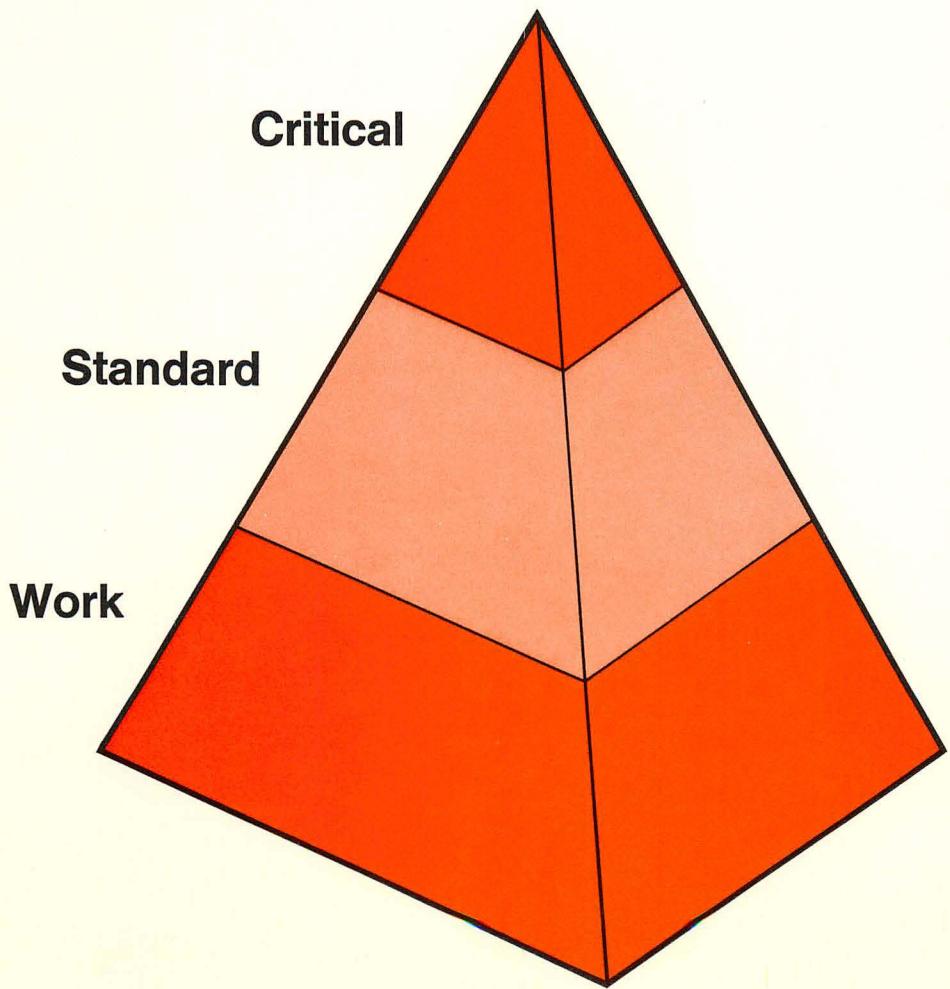
1. Will you add permanent backup to your library?
Yes No
_____ % of Req.
2. Will you add or update master files?
Yes No
_____ % of Req.
3. Will you ship data tapes to other locations?
Yes No
_____ % of Req.
4. How many scratch tapes will be added or replaced?
_____ Reels
_____ % of Req.
5. Do you have applications where thru-put is critical?
Yes No
_____ % of Req.
6. Is debris a problem?
Yes No
7. Has tape cinching caused reruns?
Yes No
8. What do you anticipate in terms of total tape requirements in the next twelve months?
_____ Reels

Now Overlay the T.A.C. Recommendations

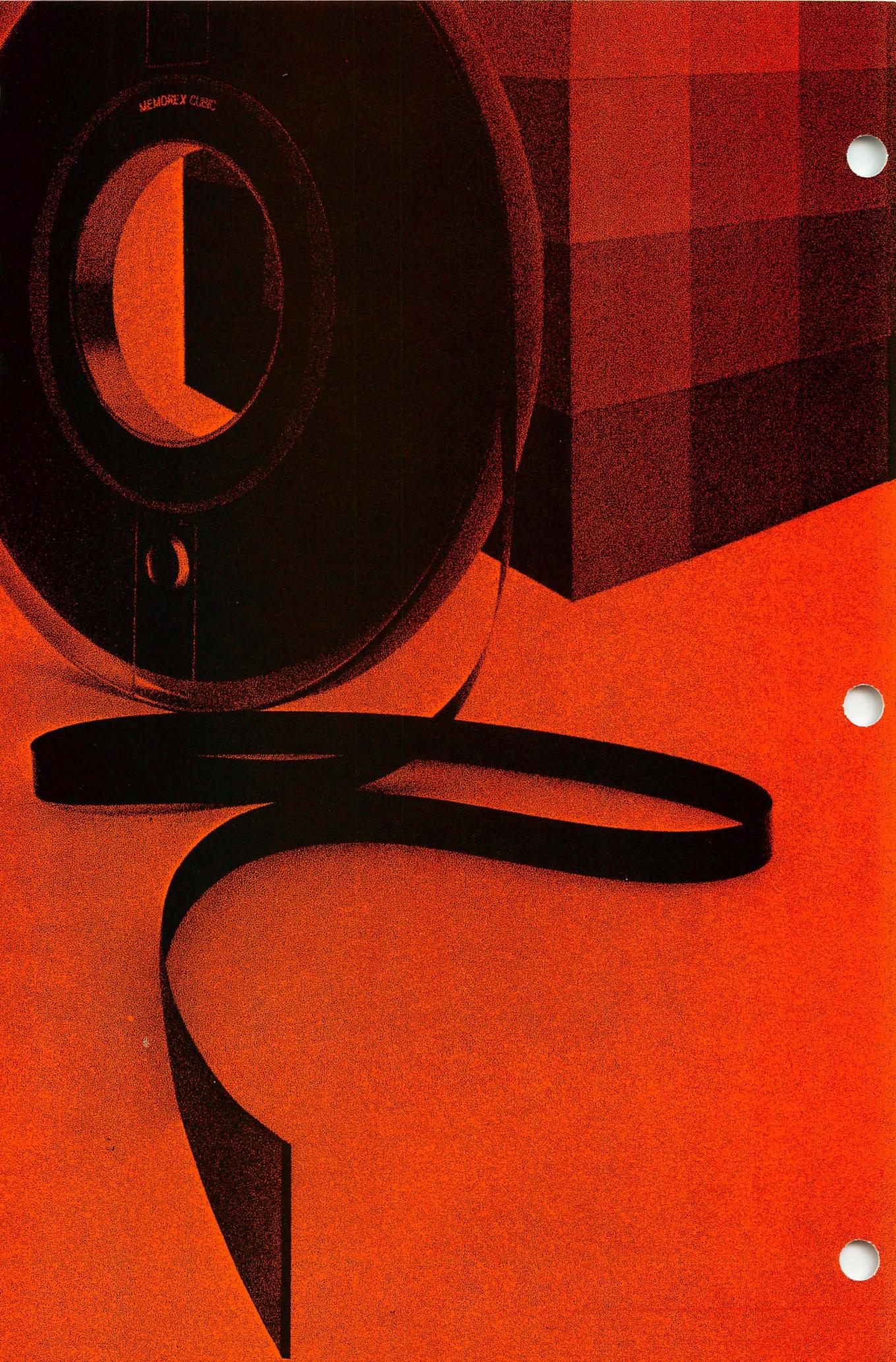
MEMOREX

**Media Engineered to Meet
All of Your Requirements**

Product Selection

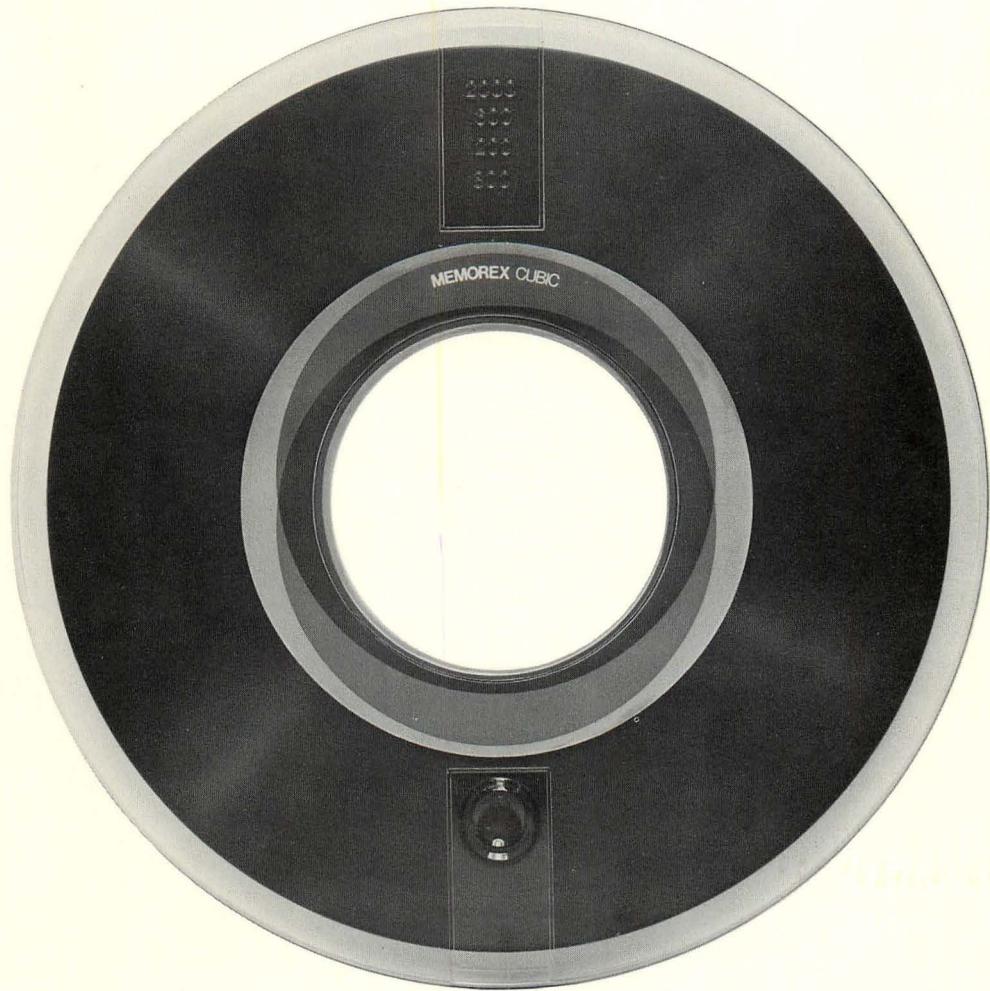


sign



**The First Tape to
Address the Principle
Cause of Tape
Retirement...**

MEMOREX



Cubic

Why Develop Cubic?

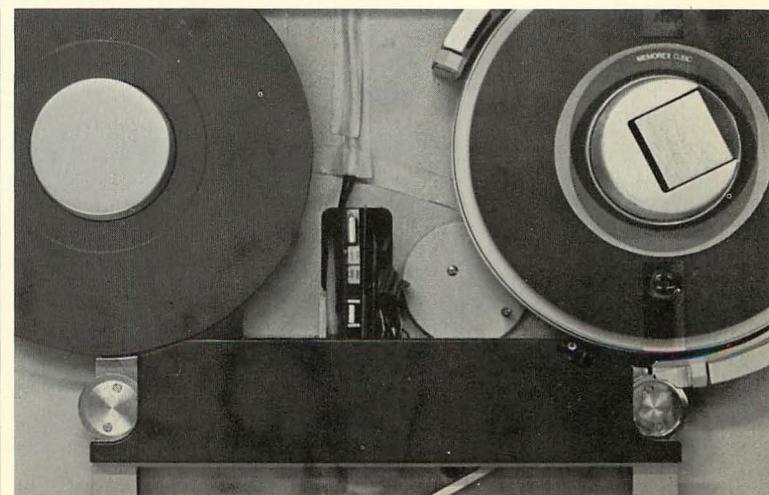
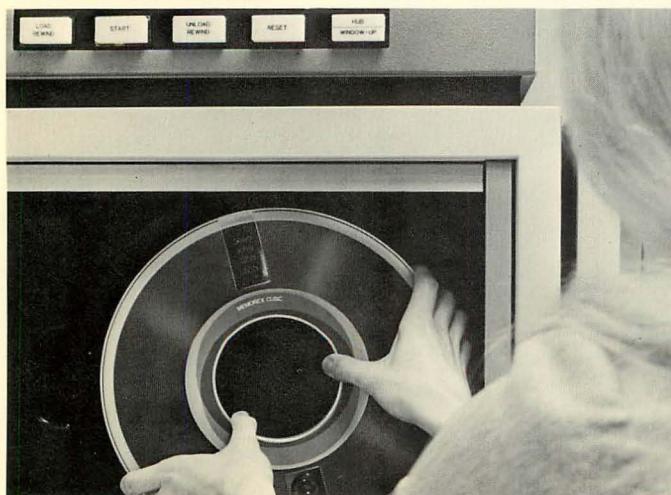
**An Extensive Survey of Tape Users
Showed Edge Damage as the Principle
Cause of Tape Retirement**

**Largest Percentage of Replacements not from Oxide Wear—
but from Edge Damage Caused by:**

**Drive
Malfunction**

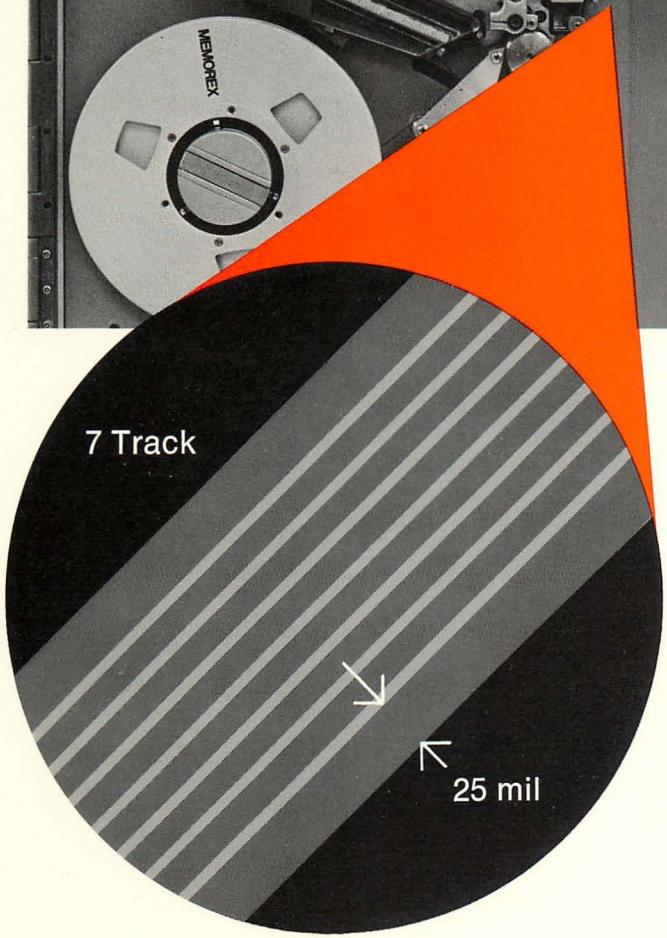
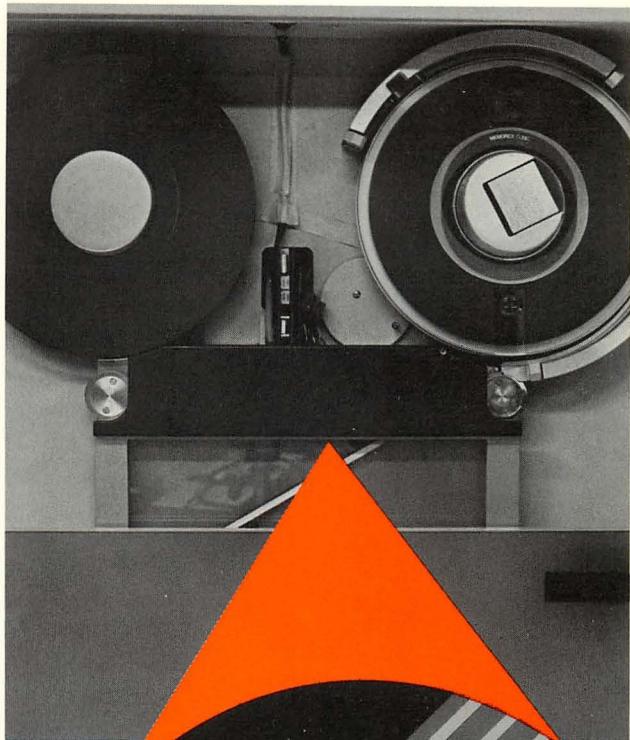
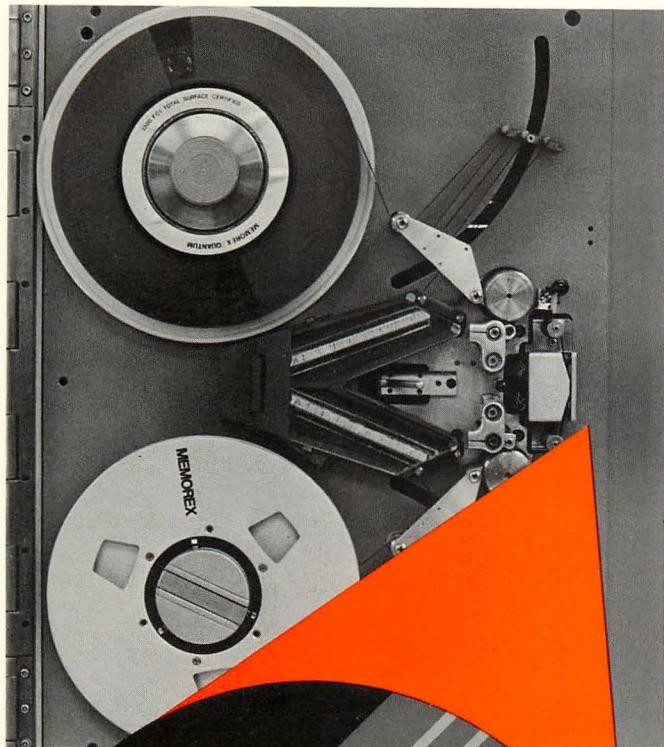
**Operator
Mishandling**

**Tape Drive
Guides**

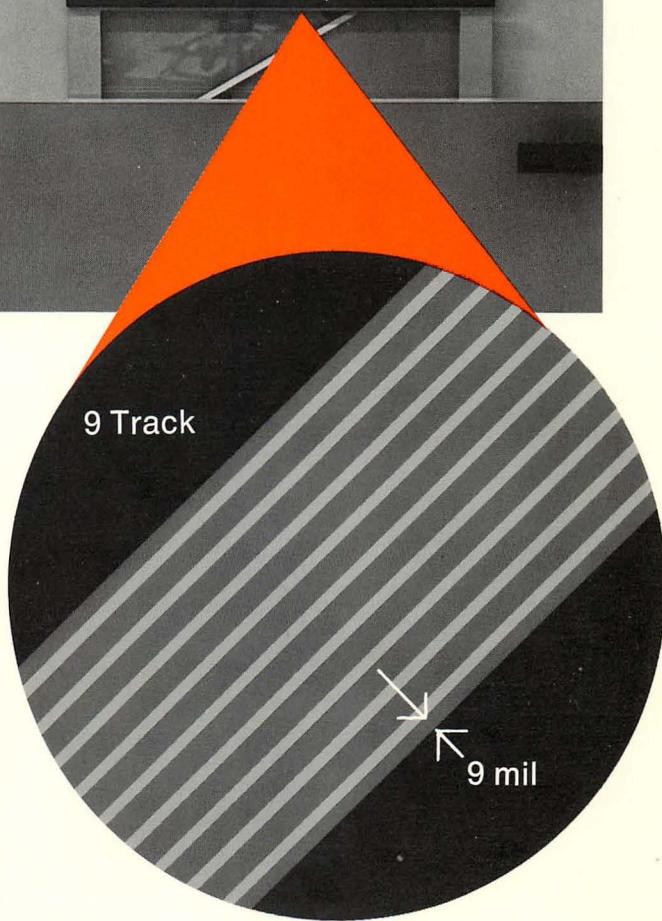


Tape Drive Performance has Increased

MEMOREX



75 IPS - 200 BPI



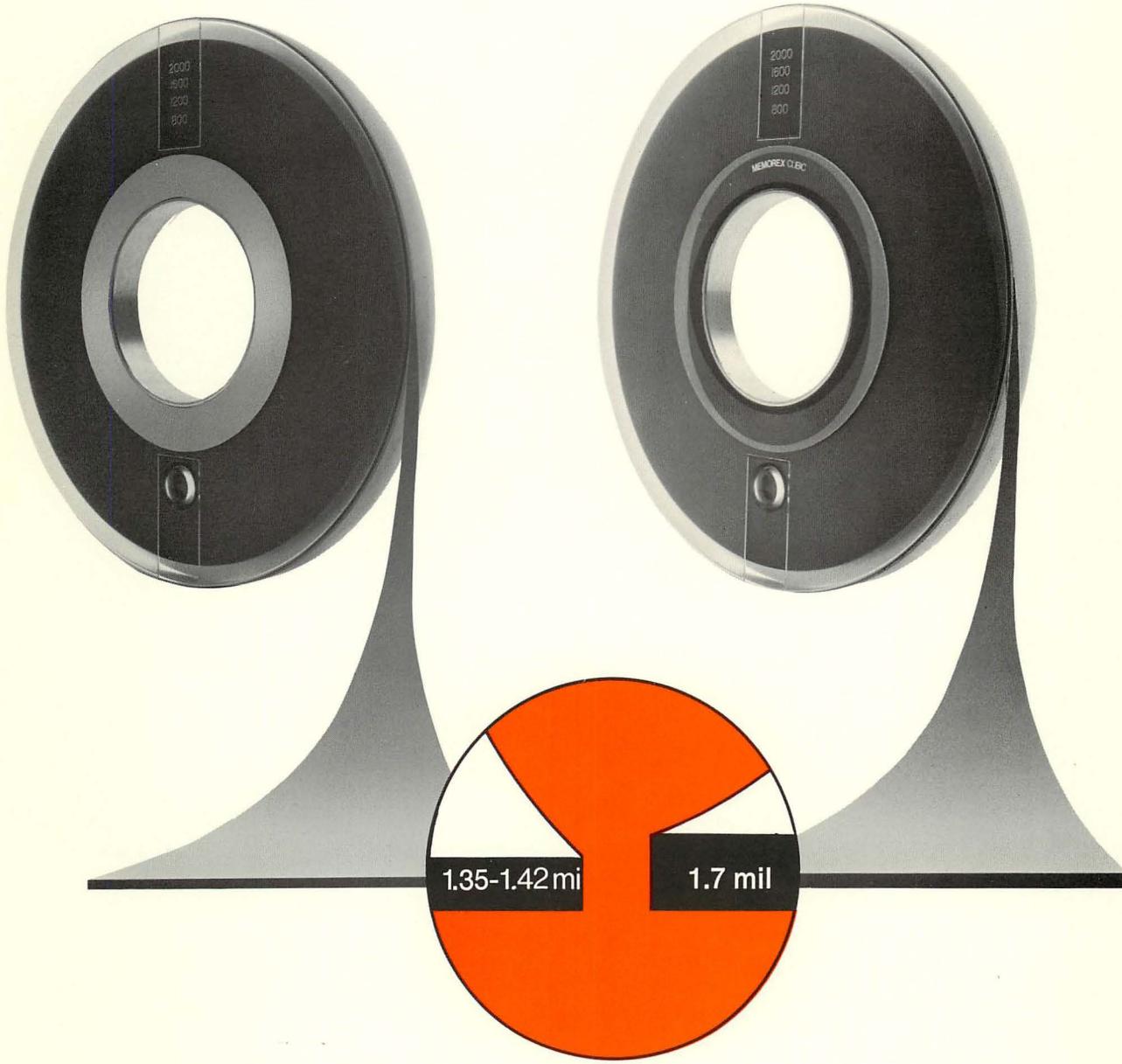
200 IPS - 6250 BPI

Cubic

On Nine Channel Recording there is a 300% Greater Probability of Data Loss Due to Edge Damage

What Makes Cubic Different?

Physically Different:
Radically Changed Base Film



Chemically Different:

Process Developed from Patented Disc Pack Technology which Enhances Performance of the Coating

Result:

Improvement in Tracking and Edge Channel Stability

Why Use Cubic?

MEMOREX

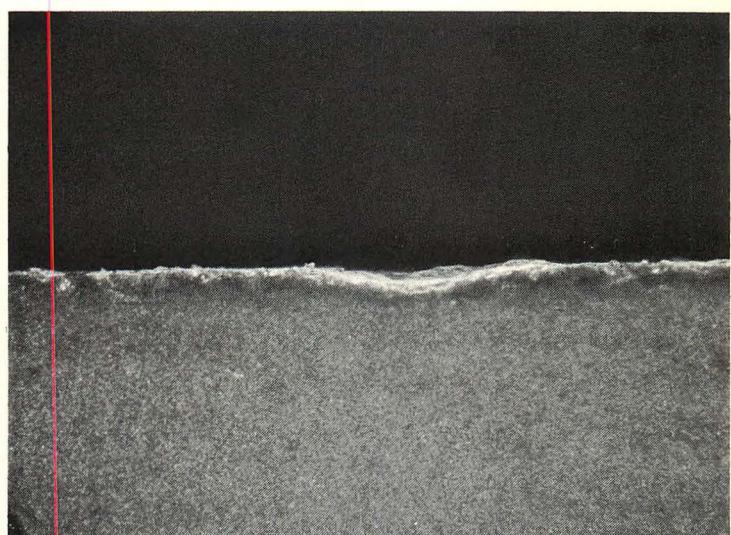
**Greater Resistance Against
Edge Damage**

More Reliable Self-Loading

Tested for 6250 B.P.I.

**Improved Performance on
Key-to-Tape Devices**

Lifetime Warranty



Cubic

Why Your System Needs the Dimensional Stability of Cubic

**The First Tape to Address Tape Drive
Specifications and Operational Handling
Problems**

**300% Greater Probability of Data Loss
Due to Edge Damage**

Cubic Resists Edge Damage!

**Higher Incidence of Tape Misloading with
Self-Loading Cartridges**

Cubic Means Fewer Misloads!

**Greater Probability of Tape Damage on
Key-to-Tape Devices**

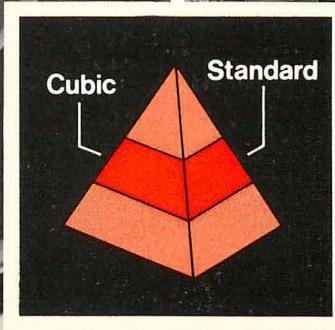
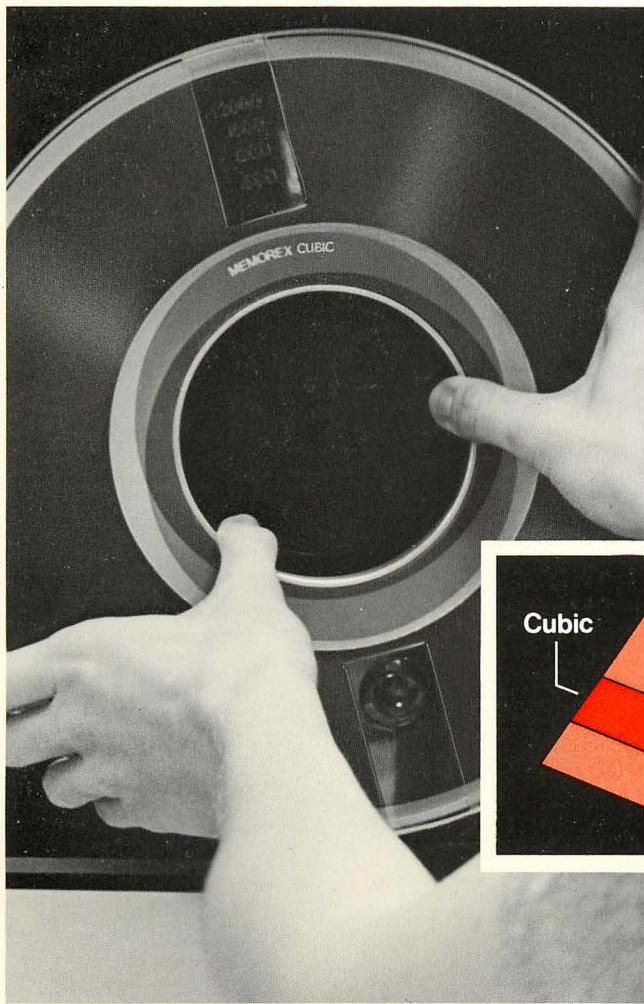
Cubic Improves Tape Handling!

Increased Overall Demands at 6250 B.P.I.

Cubic is Tested for 6250 B.P.I.!

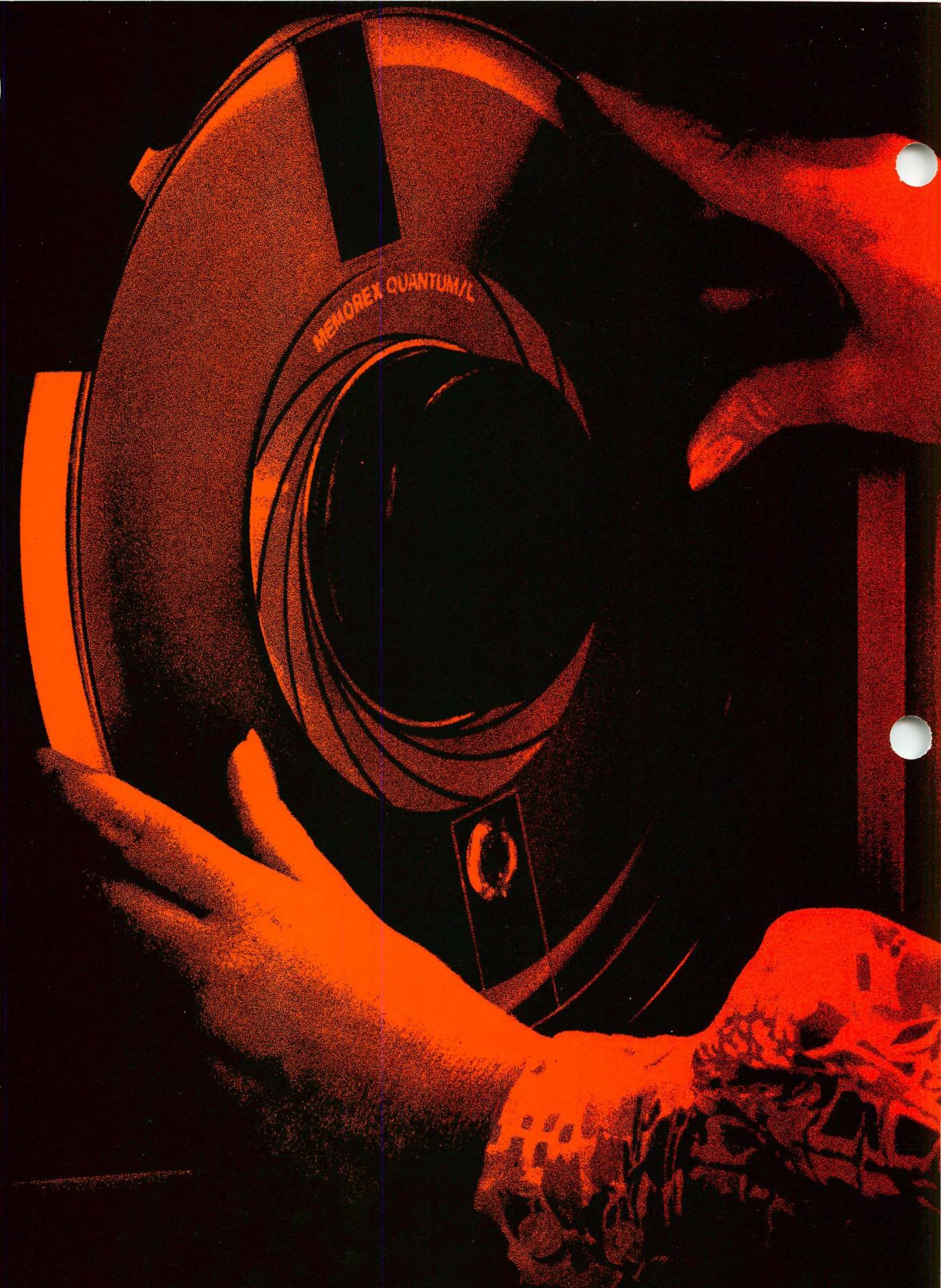
The First Tape to Address both Tape Drive Specifications and Operational Handling Problems

MEMOREX



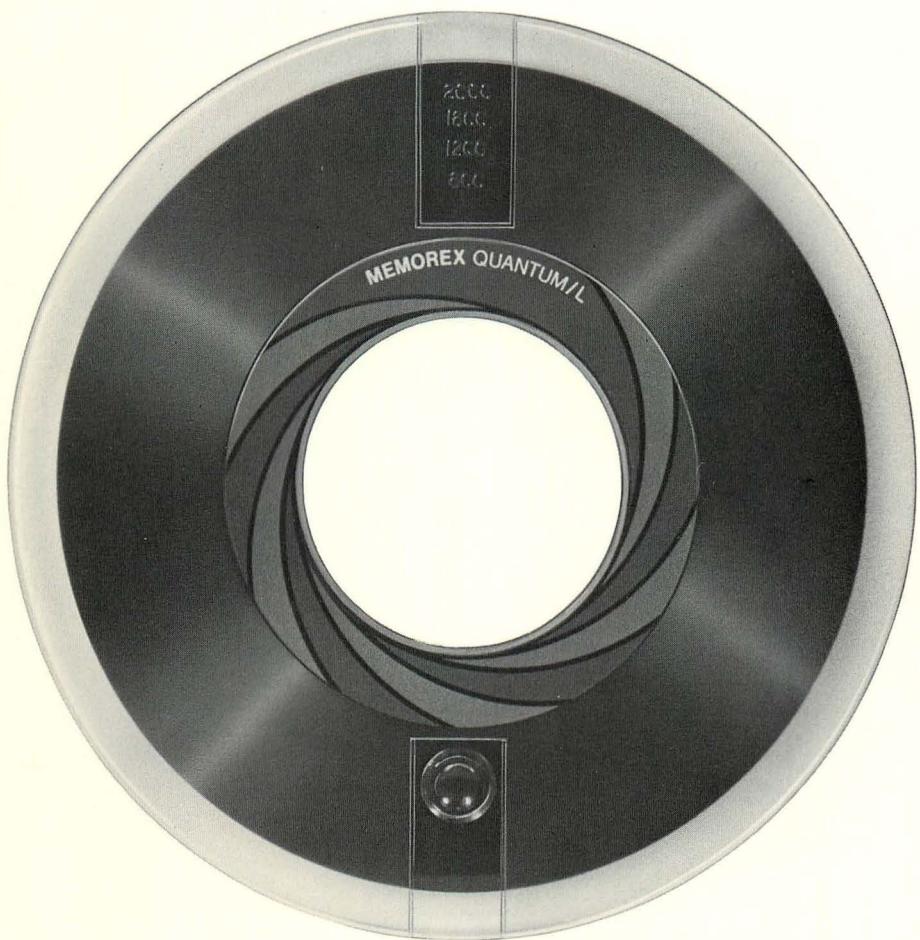
Cubic

Quantum



Quantum/L for Critical Applications

MEMOREX



Quantum/L

Evolution of Quantum/L

First Independent Tape Product

Type 22 1961

Archival Tape 5-Year Warranty

Quantum 1967

Improved Formulation Carbon Backing

Quantum/CX 1970

Critical Applications

Quantum/L 1973



What Makes Quantum/L Different?

MEMOREX

Cross-Linked Polymer Chain

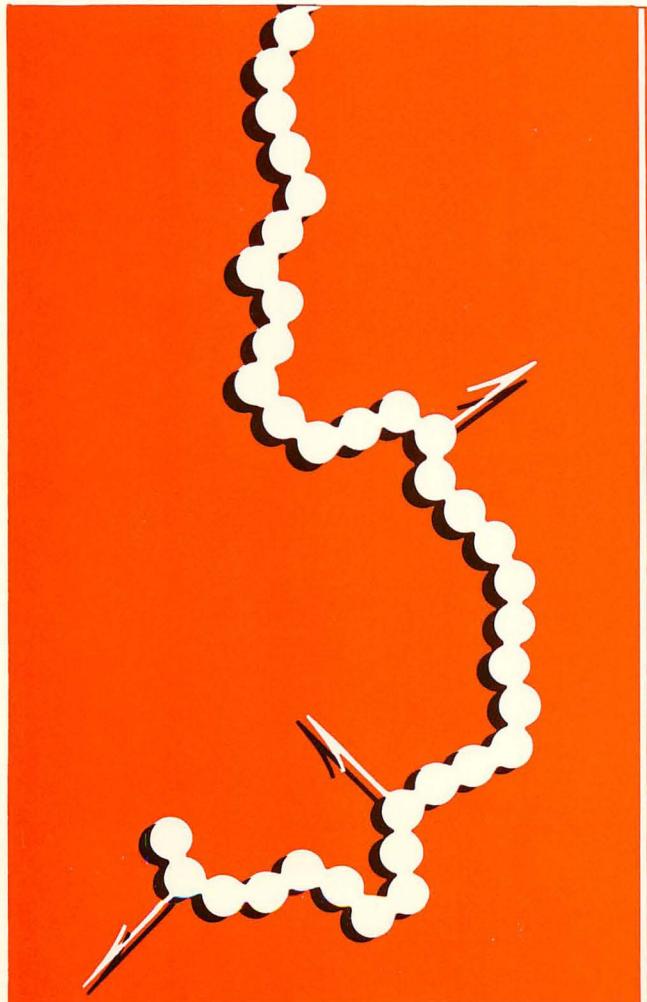
A Memorex Coating Formulation and Process Application That Results In:

**Error
Resistance**

**Chemical
Stability**

**Mechanical
Strength**

Conventional Tape



Quantum/L With Cross-Linked Polymer Chain



Quantum/L

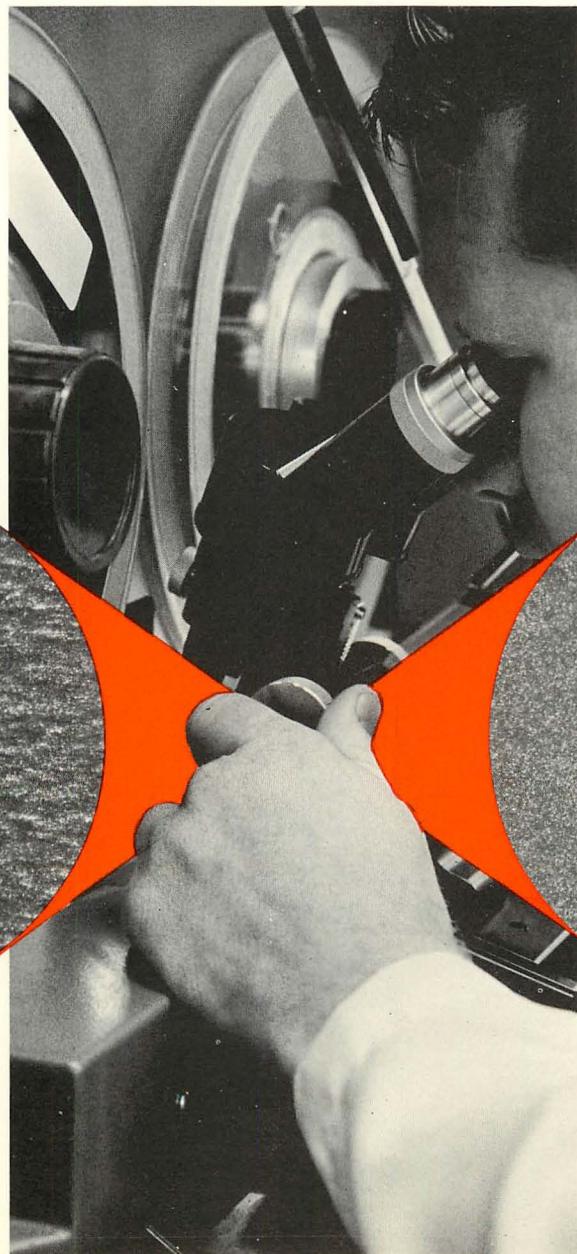
A Smoother Surface

Resulting in FEWER DROPOUTS

Better Tape To Head Contact

Less Self-Generated Debris

Less Recording Head Wear



Theirs

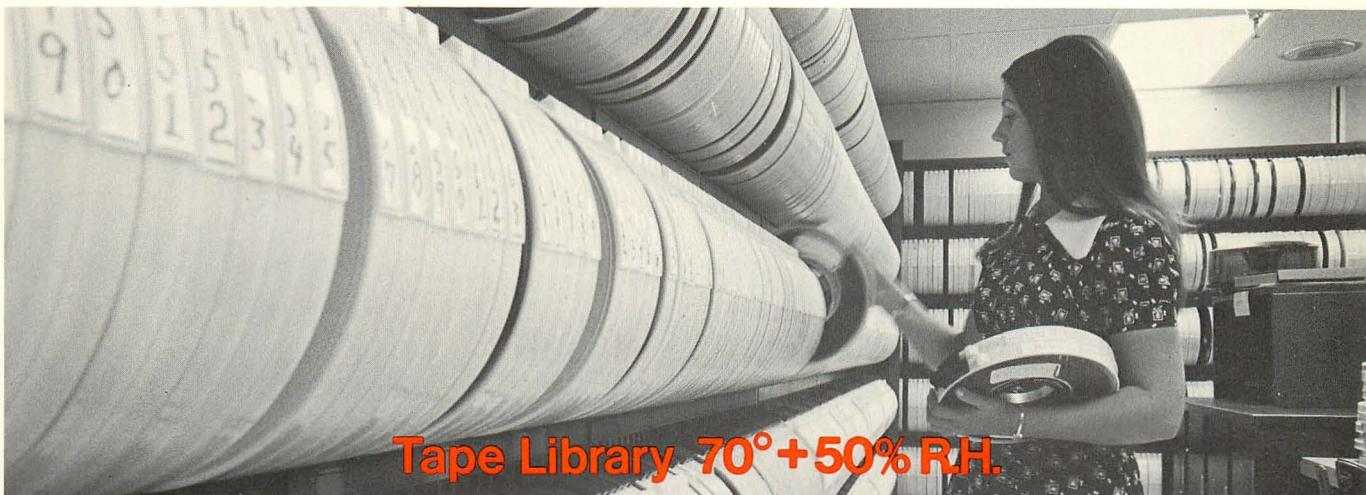
Ours

Chemical Stability and Mechanical Strength

MEMOREX

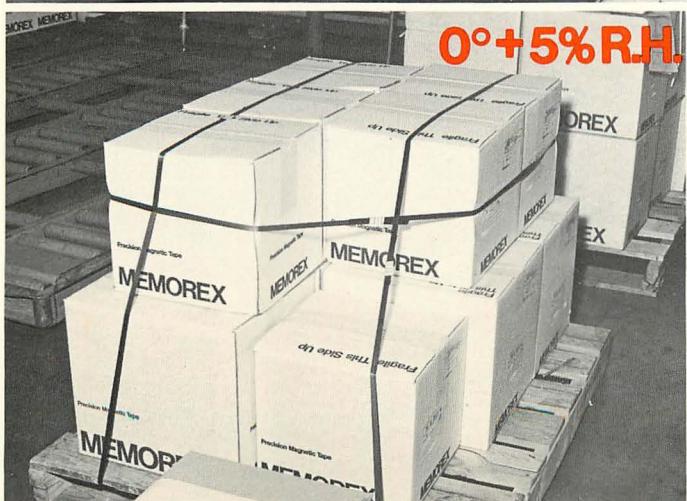
**Highest Environmental Range of any
Tape on the Market**

**Less Self-Generating Debris Resulting
in the Cleanest Tape in the Industry**

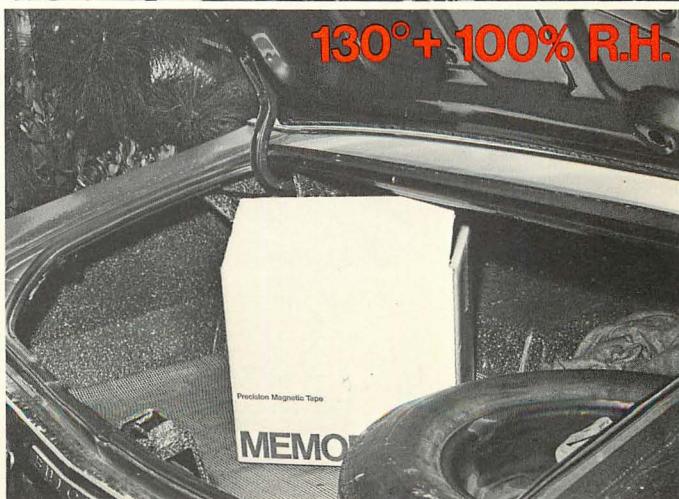


Tape Library 70° + 50% R.H.

Quantum/L



0° + 5% R.H.



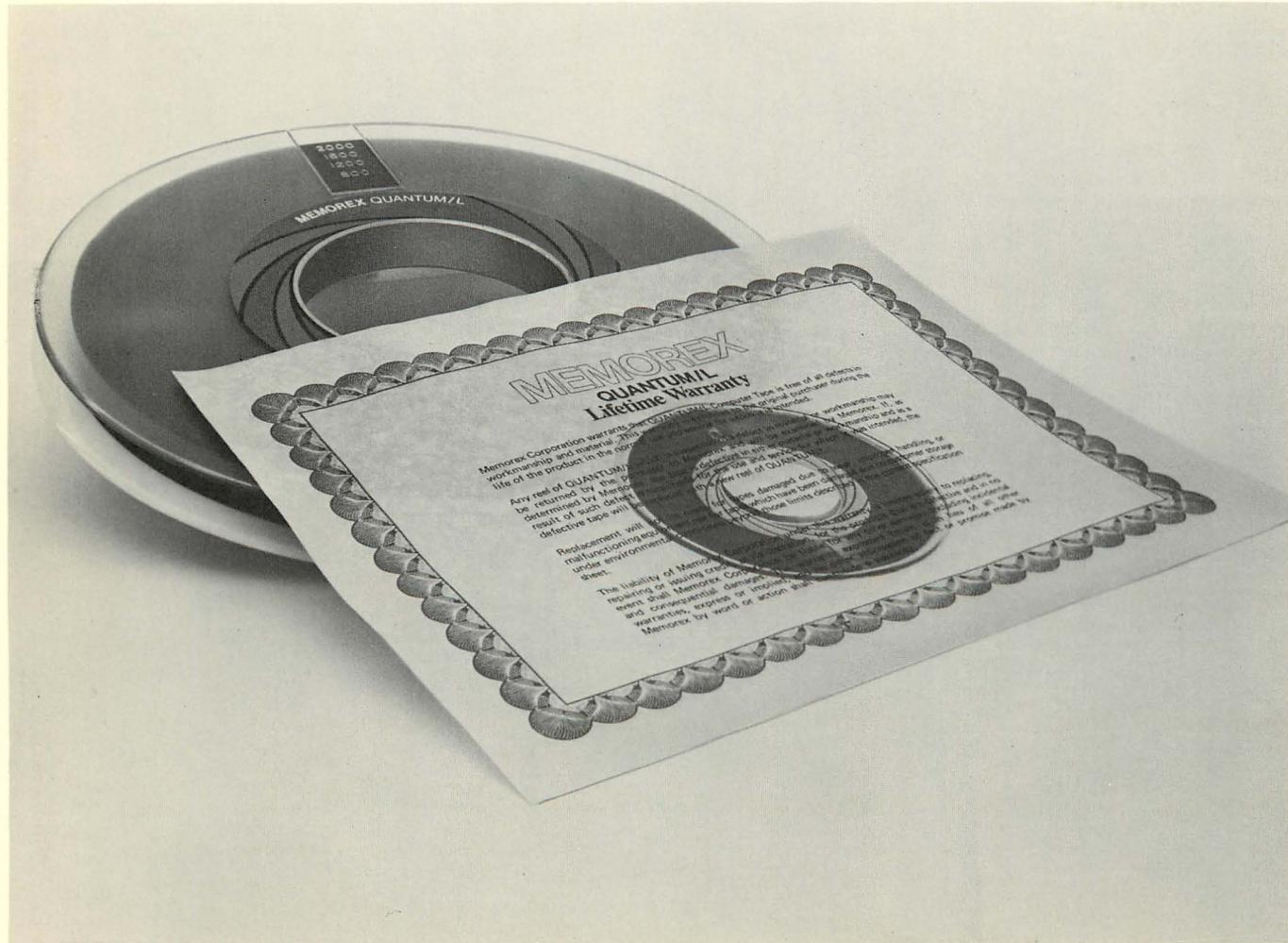
130° + 100% R.H.

A Lifetime Warranty

Expression of Manufacturer's Confidence
Customer File Integrity

What is a Tape Lifetime?

Simulated Torture Testing Equal to
70 Years Heavy Usage
Without Appreciable Error Growth



Why Your System Needs the Security of a Lifetime Warranty

Archival Storage Key Master Files Input Files

Critical Data Files Disc Backup

MEMORANDUM

Quantum/L

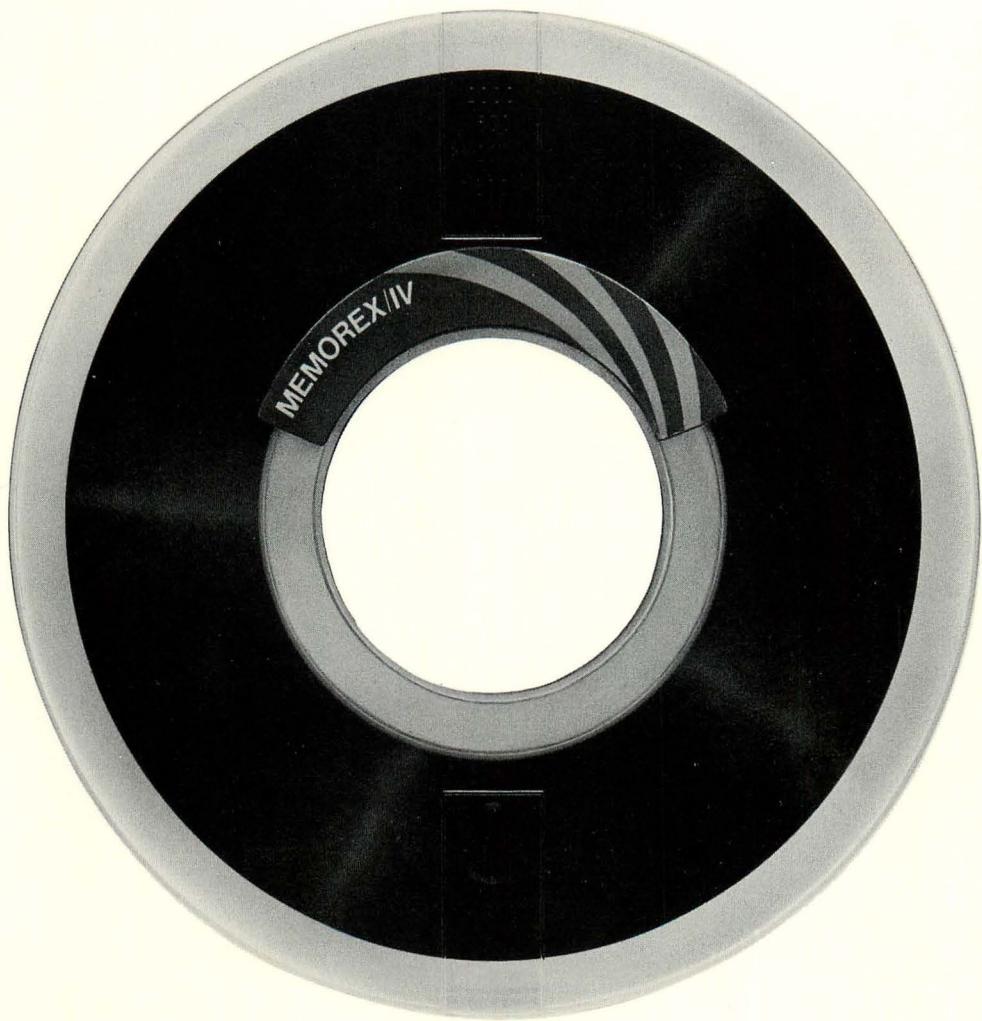
Memorex
IV



The New Fourth Generation Tape

**The Price/Performance Leader
in Work Tapes with Sales Exceeding the
Total U.S. Requirement for 1975**

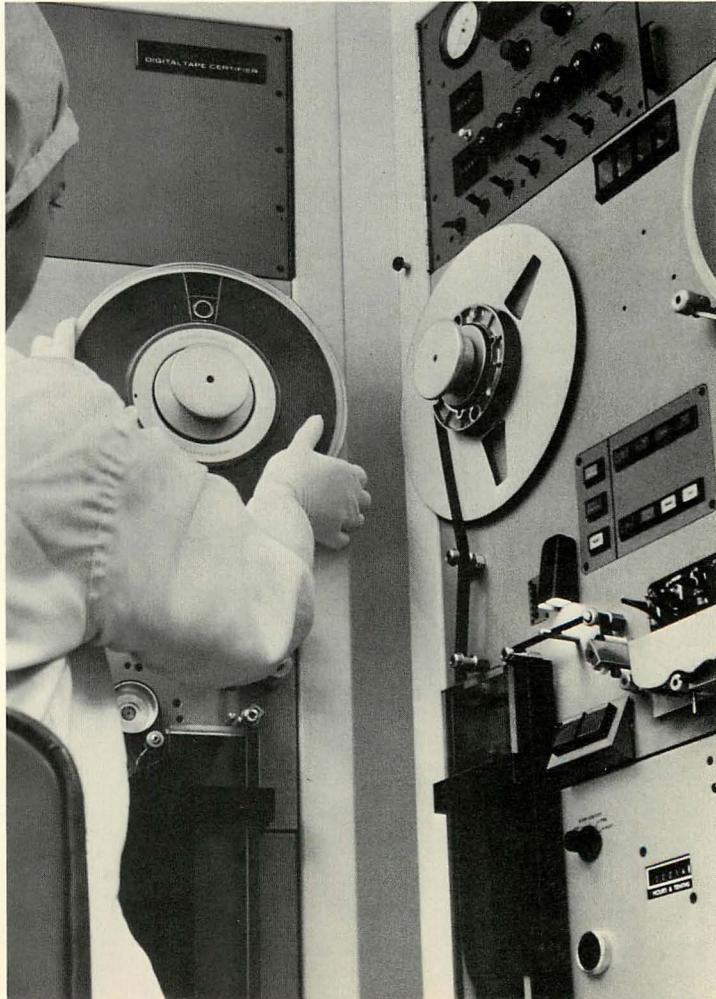
MEMOREX



Memorex/IV

Memorex/IV

Oxide Formulated for Today's Higher Densities
Smooother Surfaces—Has the
Durability and Smoothness of Quantum/L
Most Durable Tape in its Class
Fully Tested for 6250 B.P.I.



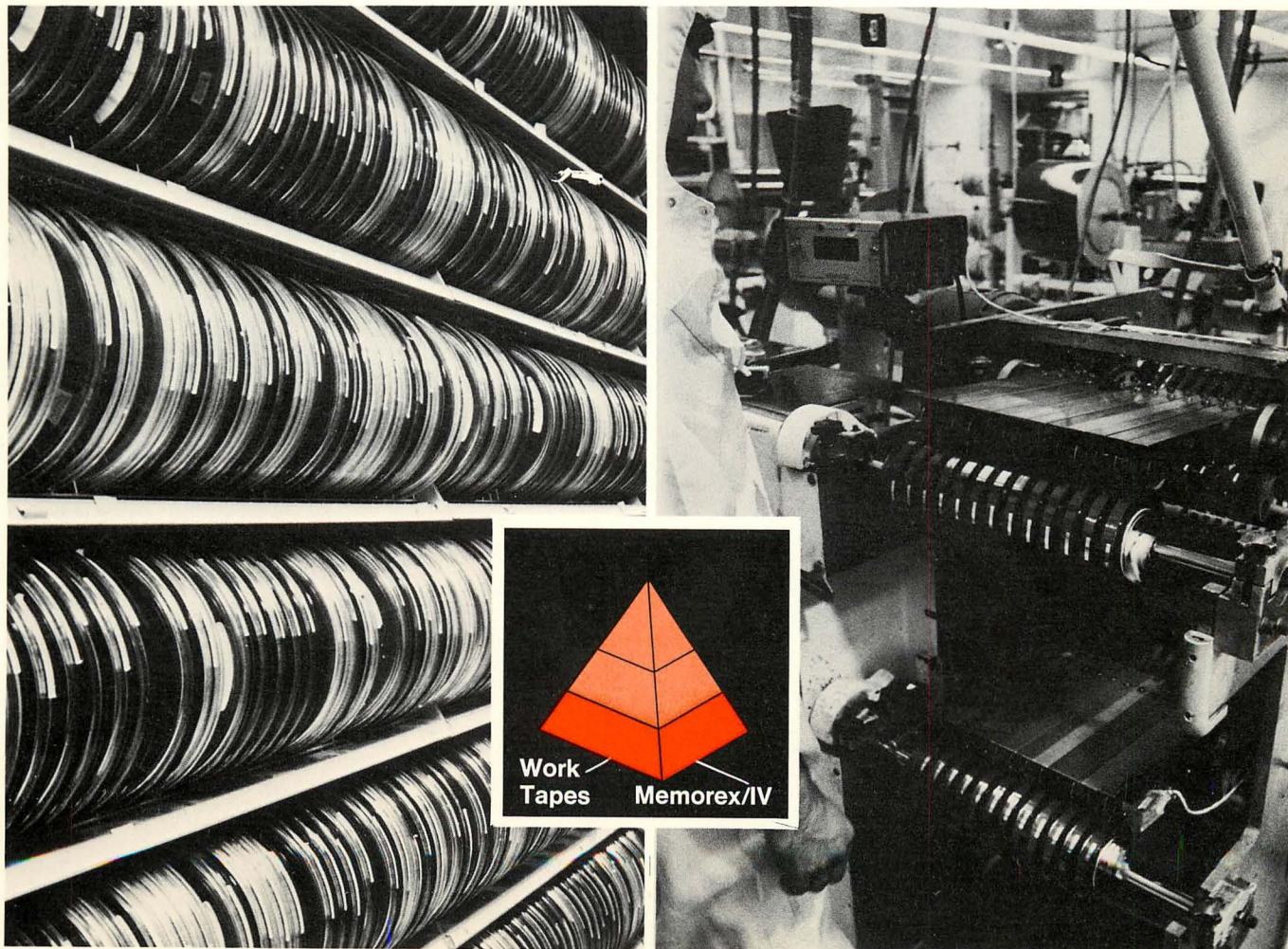
Your System Needs the Price/Performance of Memorex/IV

MEMOREX

Fourth Generation Workhorse

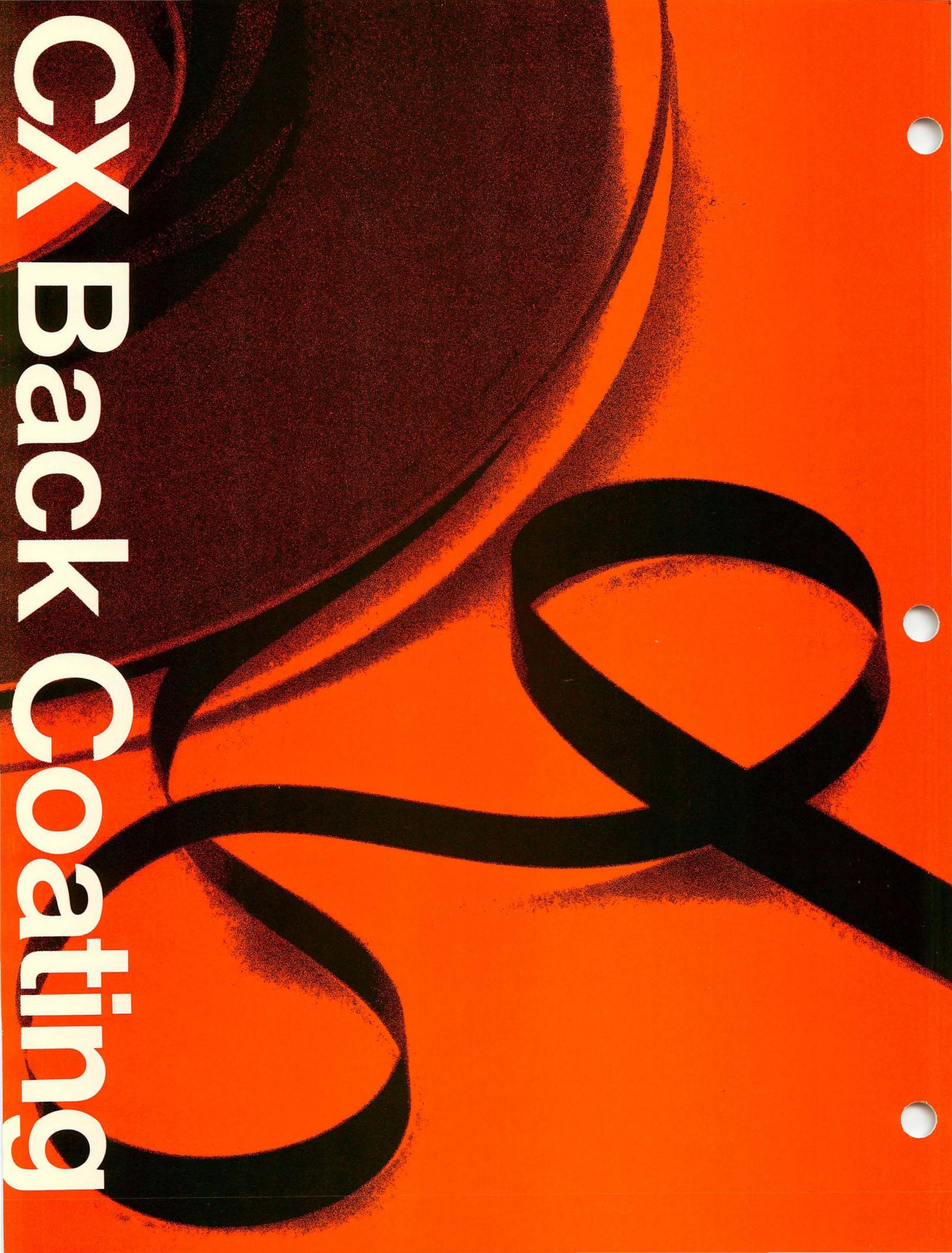
**Performs on Fourth Generation Systems
as MRX III did on Third Generation
Systems**

Most Durable Tape in its Class



Memorex/IV

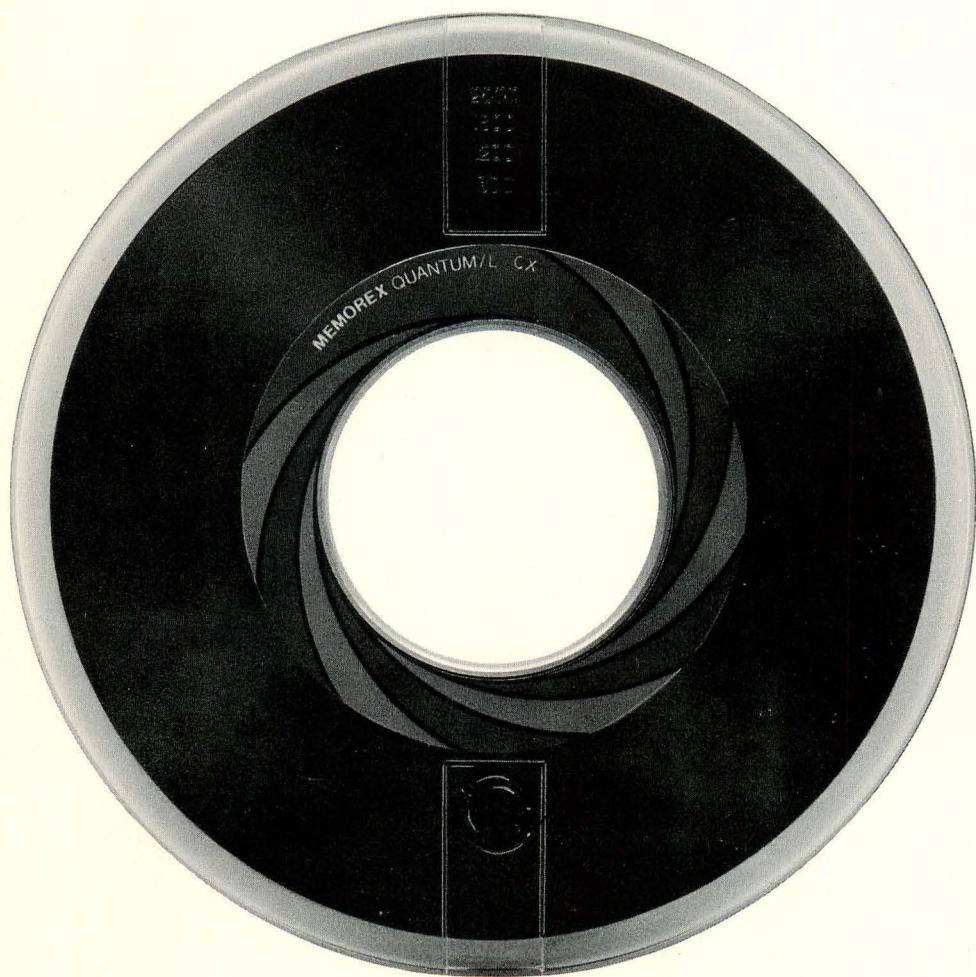
QX
Back Coating



Back Coating - Another Memorex First

MEMOREX

We Developed a Solution for Video
Recording Problems -- Then Used That
Technology to Improve Digital Recording



CX Back Coating

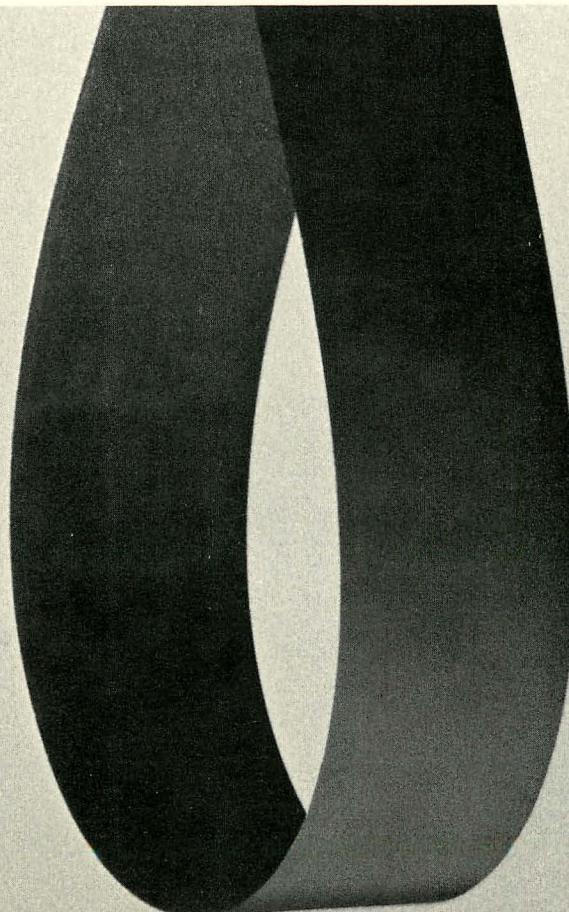
Unique Advantages

CX Backing Adds New Values to Premium-Value Tape . . .

Minimizes Debris Accumulation

Virtually Eliminates Scratching

Improves Drive Handling Characteristics



Back Coating Reduces Tape Errors

MEMOREX

Minimizes Debris That Can be Wound Into Tape Pack Forming Dropouts

Minimizes Static Charge That Attracts Debris



CX Back Coating



TAB

Disc Products

Data Mark 70/70F

MEMOREX

**The Most Advanced Rotating
Memory Device in the Industry**

Completely Self-Contained

Closed-Loop Air System

Optimum Data Integrity

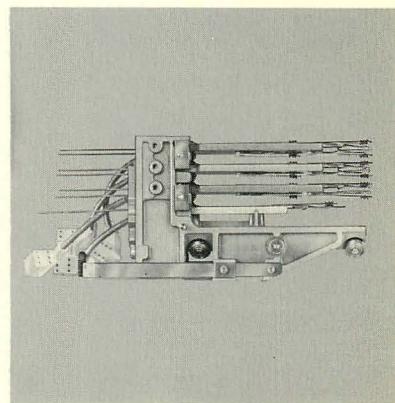
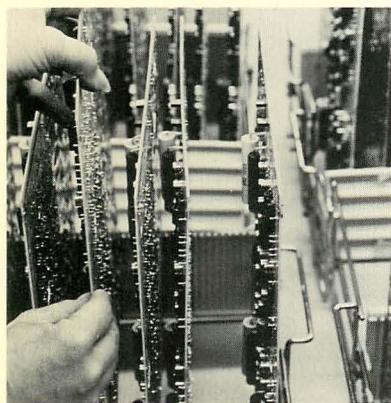


Data Mark 70/70F

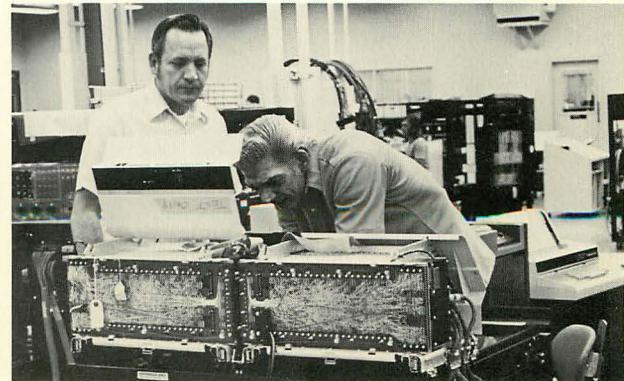
**Interchangeable with the IBM 3348, Model 70,
Model 70F Modules and Other MRX 3640 or
IBM 3340 Compatible Disc Drives**

Data Mark Data Module— A New Direction in Disc Technology:

**Head Assemblies, Electronic Circuitry, Multiple Discs and
Spindle are All Contained Within the Sealed Module**

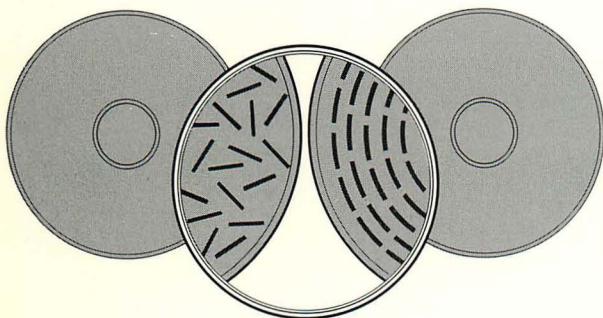


**Memorex is The Only Leading Independent
To Manufacture Both Disc Packs and Disc
Drives, Head Assemblies and Computer Tape**



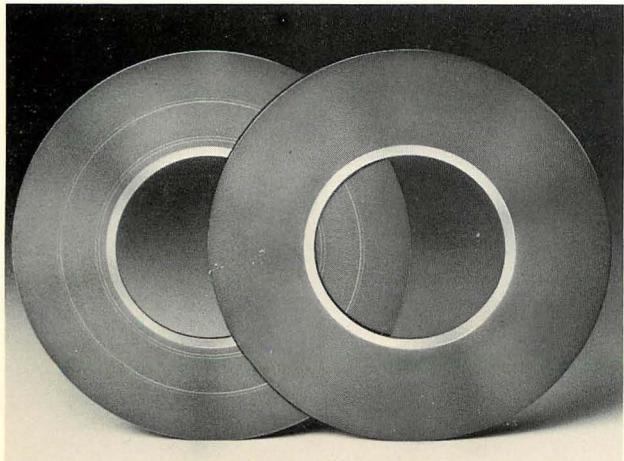
Memorex is the Major Pioneer in Coating Recording Media

Oriented Oxide



Truer Resolution
Minimized Residual Noise
Reduced Bit Shift

Armor Tough Coating and "100X" Surface Shield



Reduced Head Wear on Starts and Stops
Minimizes Heat Impact Damage
Engineered for Seven Years Life
Maximum Coating Durability
Withstands Head Loading Stress
Micro Smooth Surface

Data Mark 70/70F

MEMOREX

Experience and Excellence

Memorex Out-Engineers the Competition

Recording Head Technology

Hardware Experience

Corporate Research and Development

Manufacturing Quality Controls

The Logical Choice for Superior Performance

MEMOREX

Experience with Oriented Oxide

Armor Tough Coating

“100X” Surface Shield

Proven Expertise in Drive and Head
Manufacturing

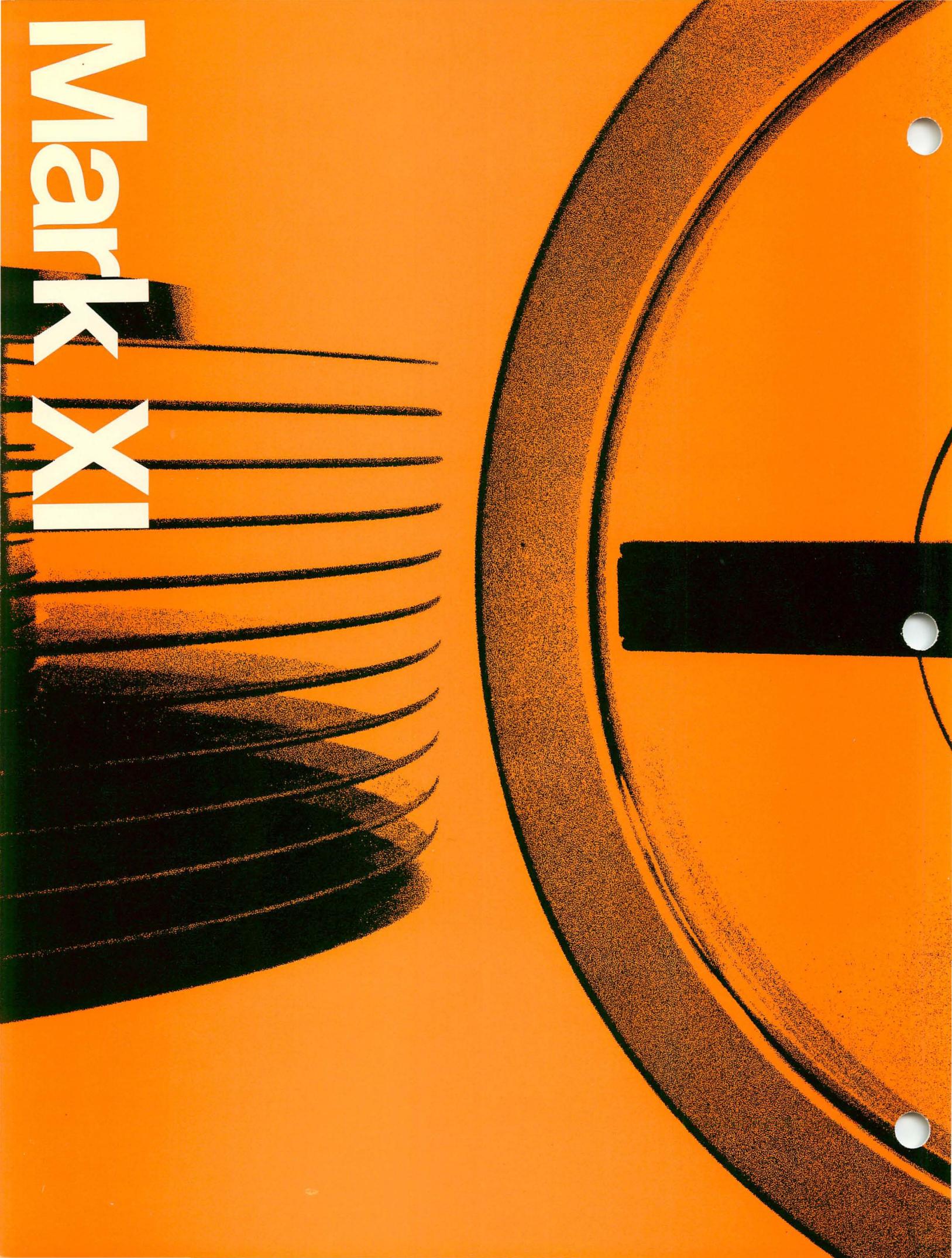
Stringent Testing

70 Upgradable to 70F



Data Mark 70/70F

Mark X



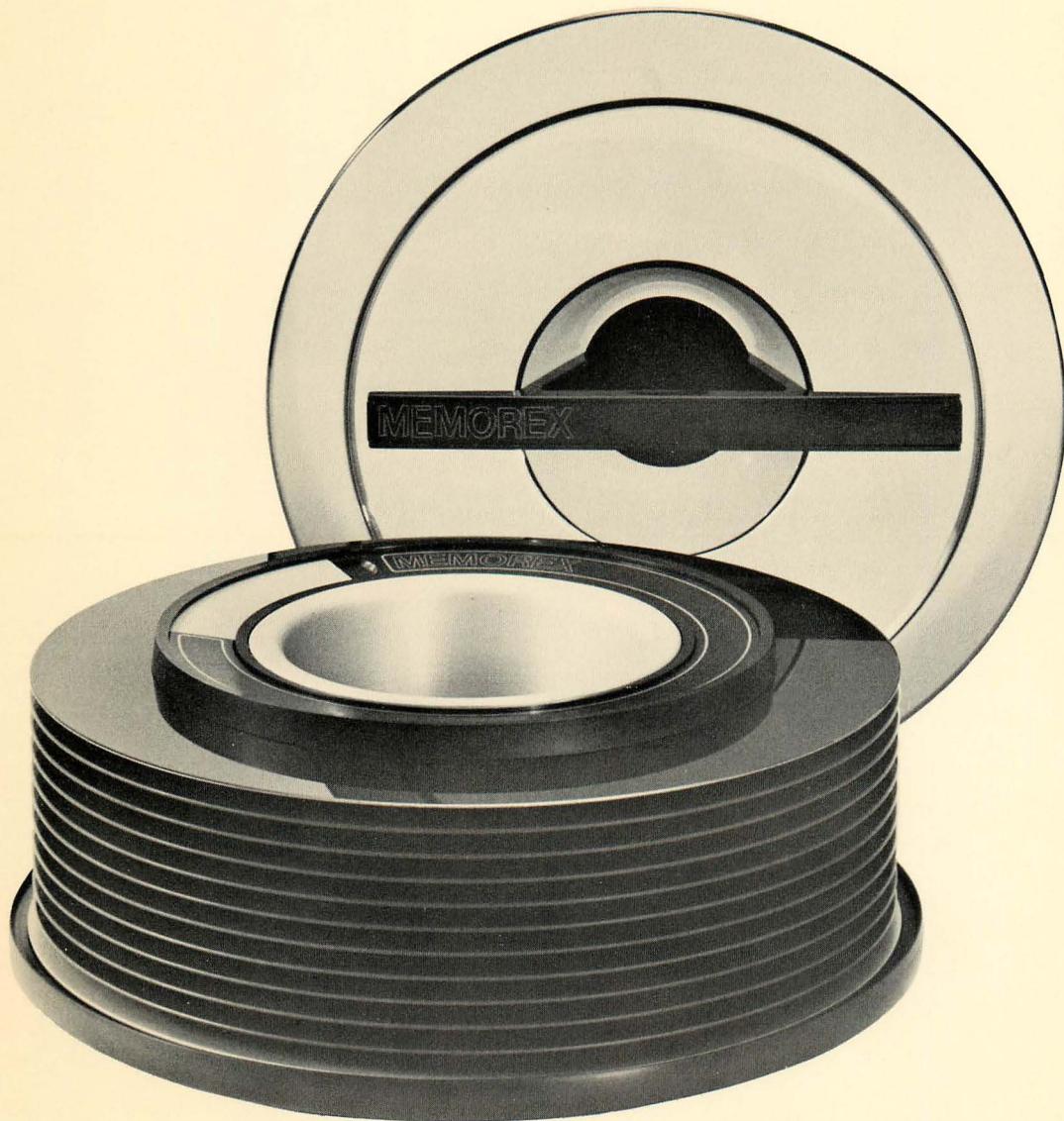
TAB

Disc Packs

The High Performance Disc Pack with A Lifetime of Superior Reliability

MEMOREX

Mark X/1



Unmatched Performance from the World's Largest Independent Manufacturer of Disc Packs

Mark XI Double Capacity

MEMOREX

**The Premium Disc Pack—Comparable
to No Other in Design, Manufacture,
Performance and Reliability**



Mark XI

**Compatible with the Memorex 3675 and
the IBM 3330-11 and Comparable Disc Drives**

What is a Premium Disc Pack?

Quality Engineered for Trouble-Free Operation

Memorex Was the First Independent to Offer the Thin Coated 3336-11 Disc Packs

Memorex Was the First Independent to Orient the Oxide on 3336-11 Disc Packs

Memorex Developed a Proprietary Servo Writing Process for the Mark XI

Comprehensive Testing

Over 100 Manufacturing Audits

Tested on Memorex Designed Equipment

Final Tested Under Stringent Conditions

Best Performance Record of Any Independent

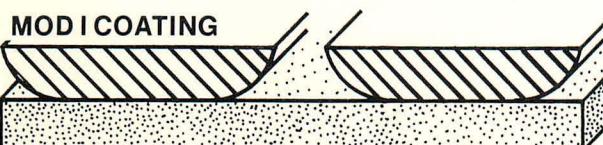
Armor Tough Coating Reduces Potential Head Crashes

Stringent Testing Eliminates Potential Dropouts

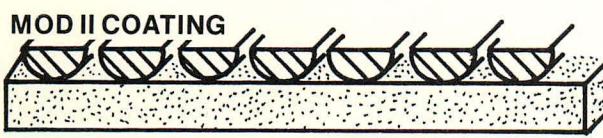
Field Engineers for Evaluations at Customers' Locations

Thin Coating is Critical to 3330-11 Disc Packs

While Others Tried to Use a Thick Coated Disc for the New Packs, Memorex Spent Time and Resources Developing a Thin Coated Disc with Superior Performance Characteristics



Eliminates Cross Talk
Increases Signal Amplitude

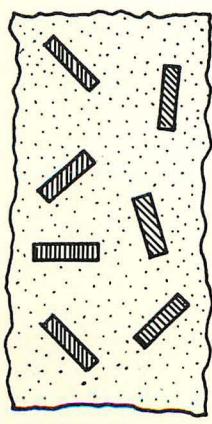


Reduces Potential Head Crashes
Greater Data Reliability

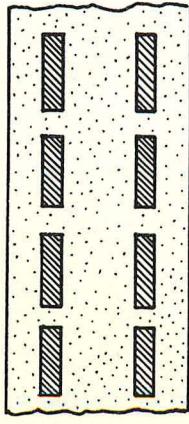


Mark X

Thin Coated Discs Require Oriented Oxide



UNORIENTED OXIDE



ORIENTED OXIDE

Better Servo Tracking
Eliminates Soft Errors
Optimizes Signal Output
Longer Operating Life

Memorex Quality Production Creates the Most Reliable Disc Pack in the Industry

Substrates Polished to the Smoothness of Optical Glass

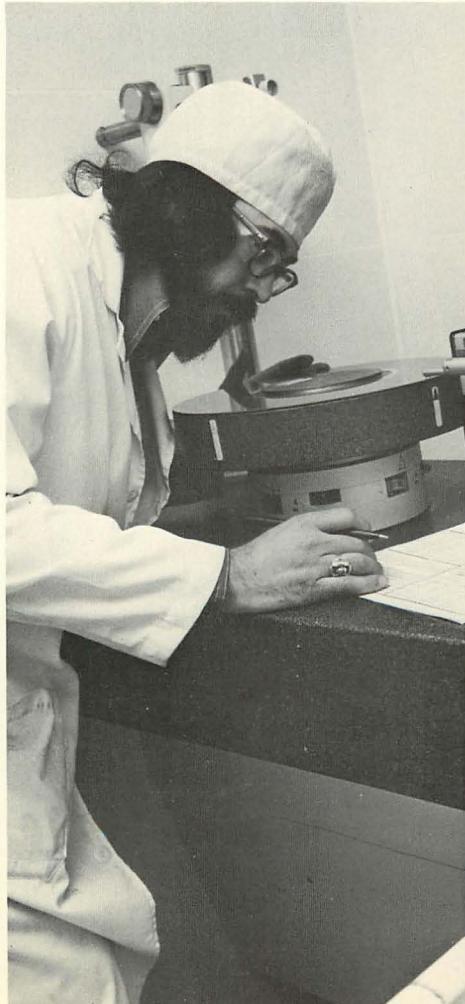
Proprietary Process to Enhance Substrate Adhesion

Special Test Heads Are $\frac{1}{2}$ Altitude Flown to Test Each Disc

200% Electronic Testing of Each Surface

Dual Plane Balanced Proprietary Servo Writer Is a Result of Memorex's Experience in Disc Manufacturing

Special Drives Are Used to "Torture Test" the Disc Packs Under Marginal Conditions



The Mark XI Premium Disc Pack

MEMOREX

**Only a Manufacturer with Worldwide
Success in Disc Pack and Disc Drive
Technology Could Bring You a
Premium Disc Pack**

Special Armor Tough Coating

**Memorex's Proven Capability
in Memory Excellence**

Thin Coated

**Oriented Oxide
Critical Testing**



Mark XI

work



The High Performance Disc Pack with Proven Reliability

MEMOREX



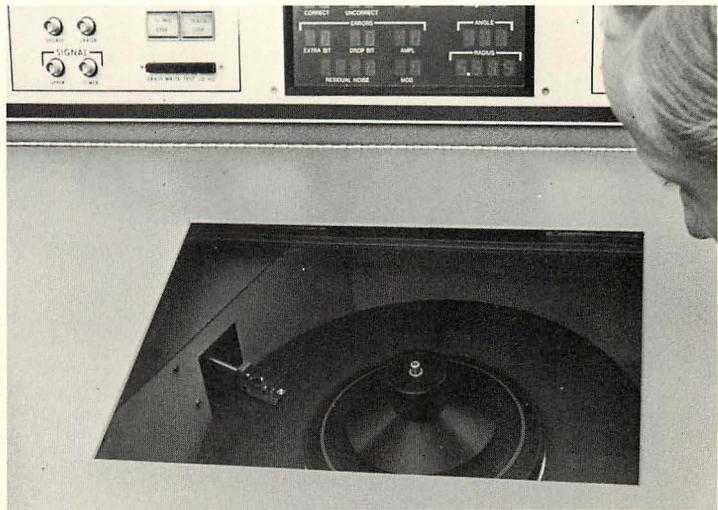
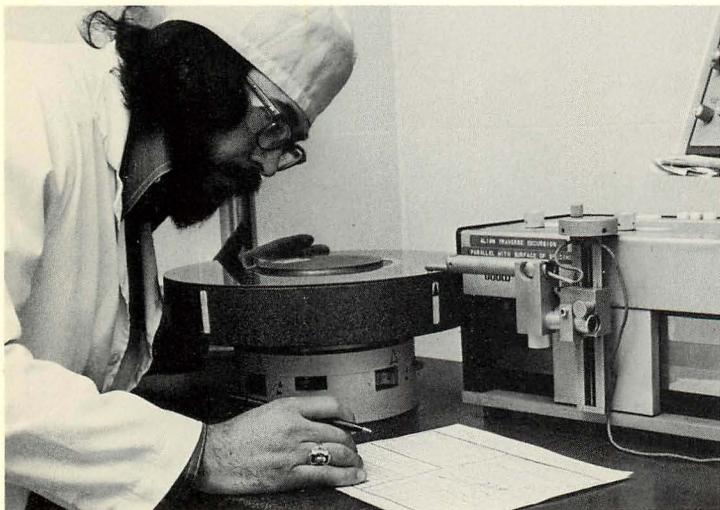
Mark X

- Third Generation Disc Pack Compatible
with Memorex 3670, IBM 3330 and
Comparable Disc Drives

The Same Dedication to Reliability and Quality Found in Data Mark and Mark XI

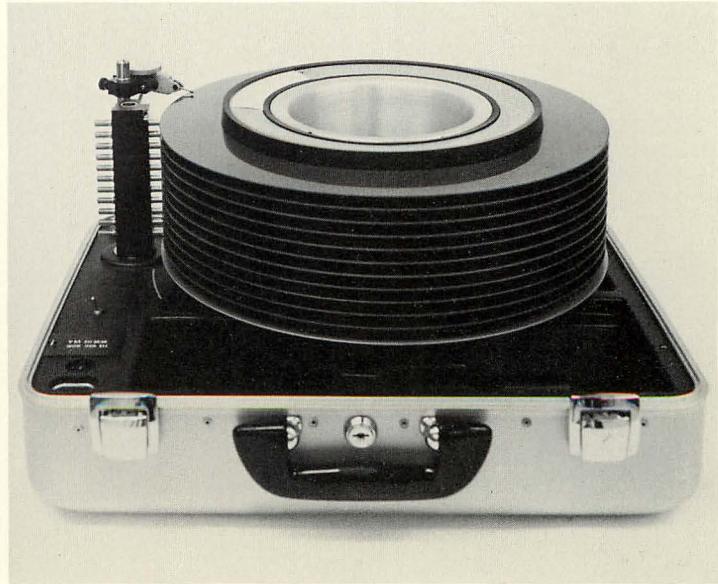
Each Mark X is Subjected to the Same "Torture Tests" as Our Mark XI Premium Pack

Upgradable to Mark XI



Each Mark X is Preinitialized at the Factory

Free Servicing and Cleaning



The Mark X Gives You Years of Proven Reliability

**Memorexperience with Mark X
Paved the way for Mark XI and
Data Mark**

Disc Experience Dating to 1964

**Memorex Designed Testing
Equipment**

Proprietary Servo Writing

**Tested on Equipment Set for Stringent
Operating Conditions**

**Full Program of Purchase and
Lease Options**

MEMOREX

Mark X

Mark III



Designed -In Excellence— Memorex's Disc Cartridges



MEMOREX

Mark III

Two Configurations
Mark IIIF (2315 Compatible)
Mark IIIT (5440 Compatible)

Available in Standard or High Capacity—
100 to 400 TPI, 1,100 to 6,060 BPI

Special Sector Configurations

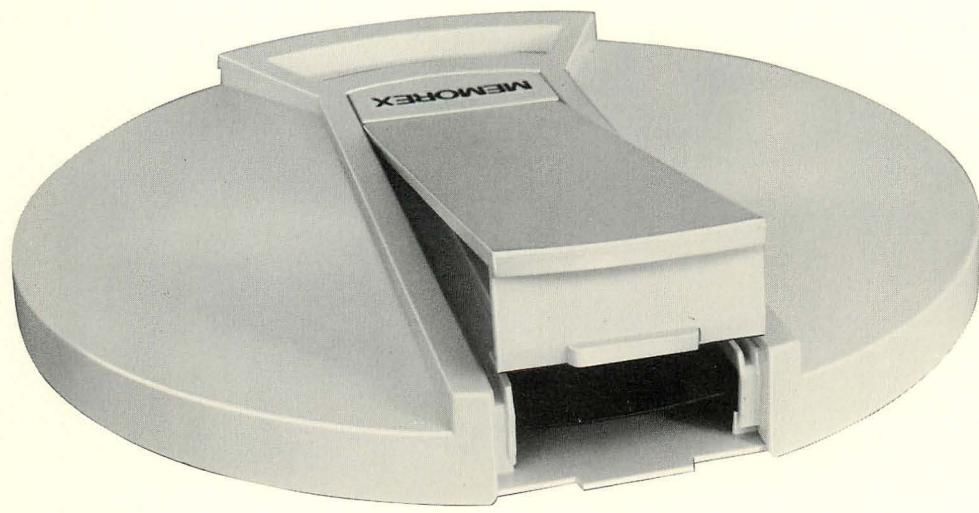
**Guaranteed Error-Free Upon First
Initialization**

Fully Warranted for 5 Years

Mark III F— Industry's First Front Loading Disc Cartridge Design Improvement in Over 10 Years

Re-engineered Door and
Latch Assembly Assures—

Positive Seal
Reliable Closure
Resistance to Contamination



Meets or Exceeds All ANSI Specifications

New Hinged Door Offers Greater Travel
Eliminates Potential Distortion Through Flexing

New Torsion Spring/Pivot Hinge Latch Design
Assures Positive Location

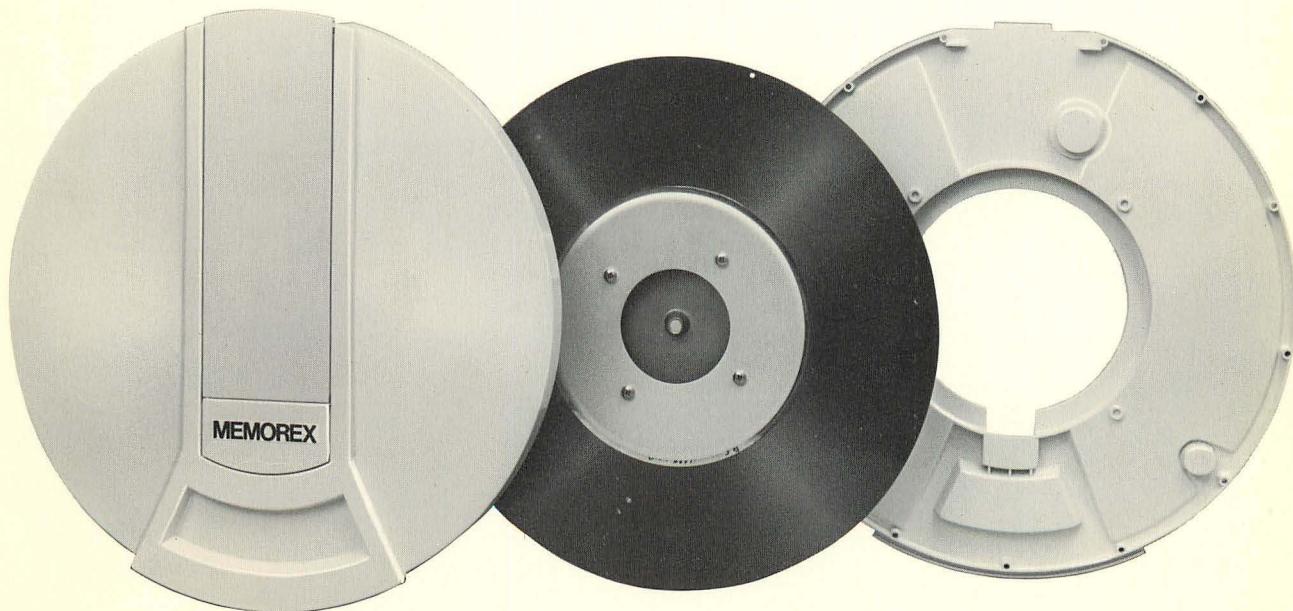
New Closing Ramp and Solid Edge Seal Further Assure
Contamination Resistant Operation
Provide Long Life and Repeatability

Enhanced Design Means Greater Operating Performance and Storage Stability

Larger Interior Clearances Allow
Reliable High Capacity Disc
Applications

Redesigned Stability Bosses
Insure Better Interior Stability—
Eliminate Damage and Debris
Caused by Poor Handling

New Positive Detent Write
Lock Design Prevents Mis-positioning



The New **Mark IIIF**—The Disc Cartridge
Pace-Setter

MEMOREX

Mark III

υοτιδιανός
φορετός



Memorex— One Source for All Your Disc Product Needs

MEMOREX

Mark I

**First Disc Pack Available from an
Independent Manufacturer**

**Used on Memorex 630 Drives
Interchangeable with IBM 1316
Packs**



Mark VI

**More Units Installed Than
Any Independent Supplier
Standard or High Capacity
and Special Sectoring
Configurations**

**Used on Memorex 660 Drives
Interchangeable with
IBM 2316 Packs**

Mark VIII

**The High Performance, High
Capacity Disc Pack with 3336-11
Type Discs**

**Compatible with CalComp
T50 / T80 or Equivalent Drives**



Mark IX

**Interchangeable with
Burroughs 9974-4 Packs**

**11 Disc Formation with Top
and Bottom Protective Discs**

20 Recording Surfaces

406 Tracks Per Surface



Mark XII

**Specially Designed
Disc Packs in Two
Configurations**

**Mark XIIC—Compatible
with CDC 9780 and NCR
658-201 Disc Drives**

**Mark XIIH—Compatible
with Honeywell MSU 451
Disc Drives**

**19 Data Surfaces Plus
One for the Pre-Recorded
Servo Tracks**

Now You Know Why Memorex is THE Alternative

**World's Largest Independent Disc
Products Manufacturer**

**Full Product Line Allows Ease of
Upgrading Disc Storage Capability**

Industry's Most Critical Testing

**Experienced Field Service Engineers
Providing On-Site Pack Maintenance**



markette

Order Card



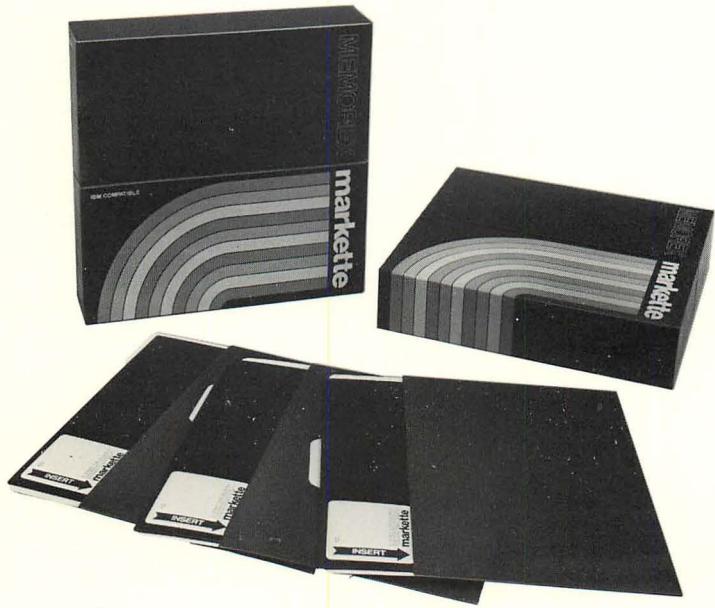
TAB

Flexible Discs

MEMOREX

The Markette Family— Human Engineered for Reliability, Long Life and Ease of Operation

Tape and Disc Manufacturing Expertise Combine to Assure Highest Quality



Markette

**Advanced Oxide Formulation Provides Stronger Surface,
Lasting Durability**



**Unique Cleaner-Lined
Jacket Protects Disc**

**Stress Relief Notches to
Reduce Handling Damage**

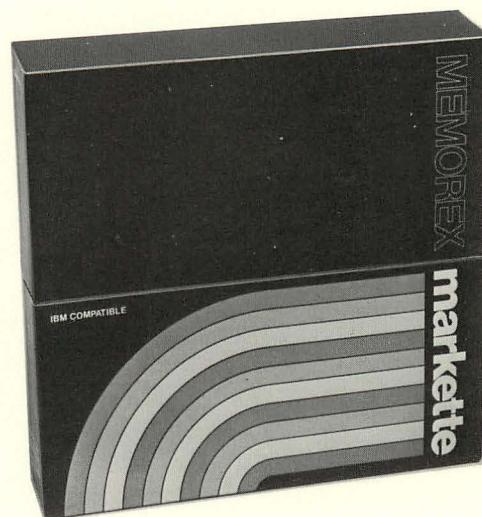
**Crush Proof Box Used as
Desk Top File, Index Tabs,
Color Coded Labels
for User Convenience**

**Critically 100% Tested for
Reliable Performance**

Versatile Markette Flexible Discs for Multiple Applications

Single-Sided Markette

**IBM Compatible
10 Million Passes
Error Free Plus Safety
Margin
1.9 Million Bit capacity
Critically 100% Tested
Human Engineered**

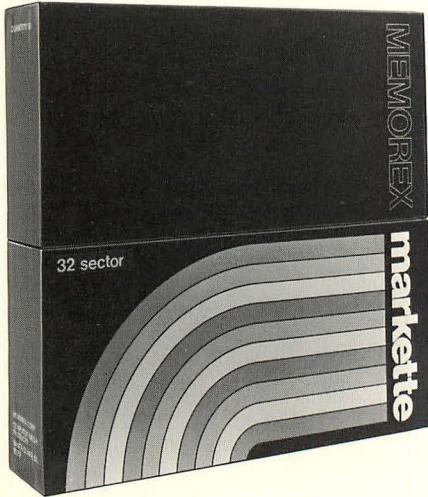


Dual-Sided Markette

**IBM Compatible
Recordable on Both Sides
Double Capacity
Built-in Markette Reliability**

MEMOREX

Markette



32 Hard Sector Markette

Compatible with Hard Sector Versions of CalComp, CDC and Pertec Drives

32 Hard Sectors on Inner Diameter

FD IV Markette

Memorex 651 Compatible

High Temperature Performance

**2.5 Million Bit capacity
Hub Reinforcing Ring**



FD VI Markette

Successor to FD V

**Memorex 651 Compatible
For Use at Standard Temperatures**

**Hub Reinforcing Ring
Highly Reliable**





TAB

Memorex Services

Strategically Located Distribution Centers Speed Delivery and Field Support

MEMOREX

Memorex Services



SCOTT
SHOOT
DOWN
THE
DODGE



MEMOREX

Software Services

The Memorex Tape Management System

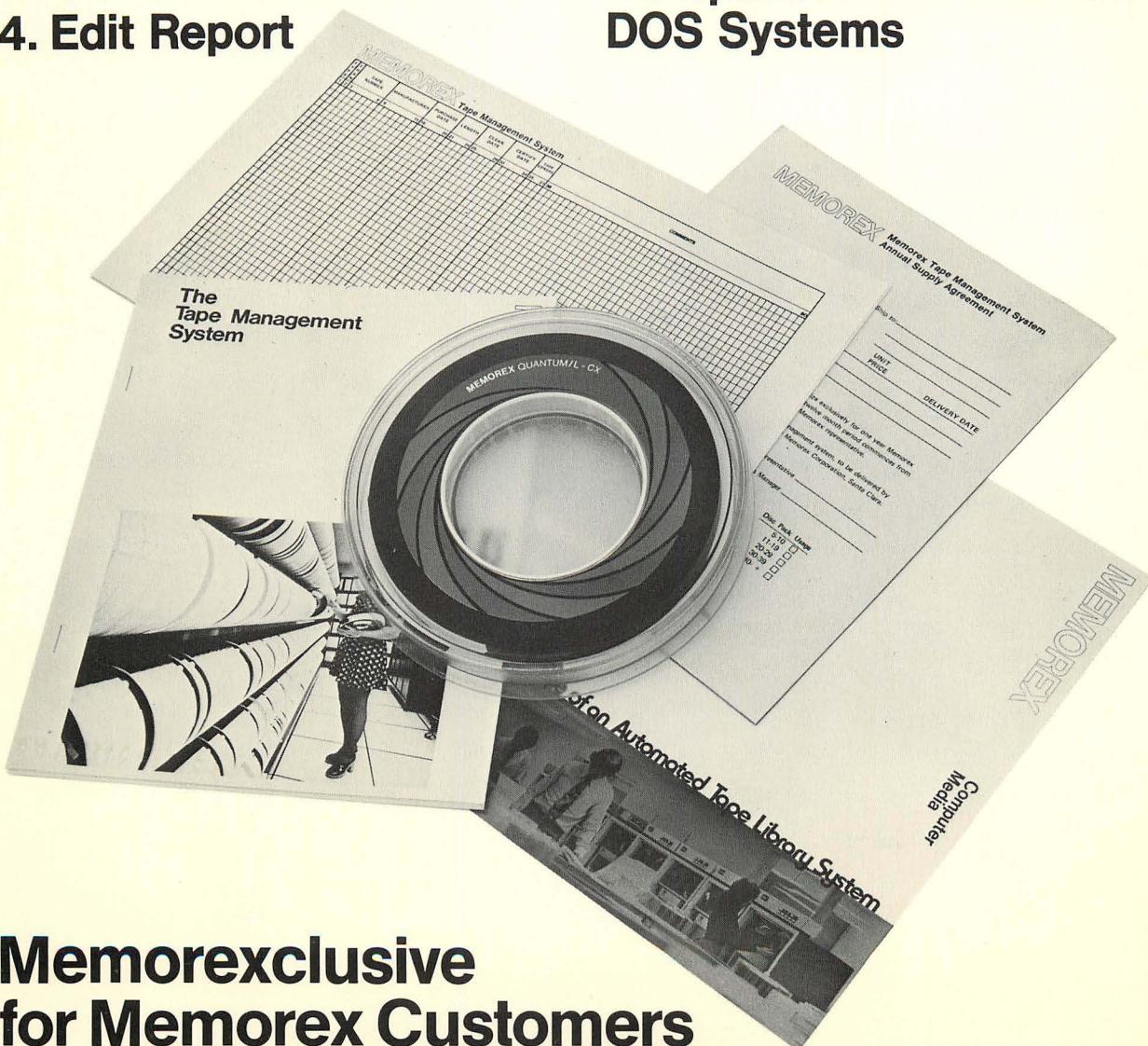
Fully Automates Your Tape Library

**Generates Four
Essential Reports:**

- 1. Data Set Name Report**
- 2. Volume Serial
Number Report**
- 3. Release Report**
- 4. Edit Report**

**Flexible, Highly Modular and
Easy to Install**

**ANS COBOL System which is
Compatible with OS and
DOS Systems**



**Memorex exclusive
for Memorex Customers**

Resource—For Evaluating Computer Operations Productivity

Gives Detailed Summary Regarding Daily Activity on a 360/370 Operating Under OS/360, DOS/360, OS/VS1, OS/VS2 and DOS/VS

Generates Three Essential Reports:

- 1. Daily Run List**
- 2. Activity Summary by Shift**
- 3. Utilization Graphs**



Memorex exclusive for Memorex Customers

Procsan—An Automated Conversion System

MEMOREX

Assists IBM 360/370 OS Users in Conversion from 2311's or 2314's to 3330's

Procedure Library (Proclib) References Are Charged Automatically So That 3330's Are Referenced for Public Space

Generates Four Essential Reports:

- 1. Monitors All Lines of a Proclib That Meet Same Criteria**
- 2. Proclib Conversion Exception List**
- 3. Updated Proc List**
- 4. Proc Listing**



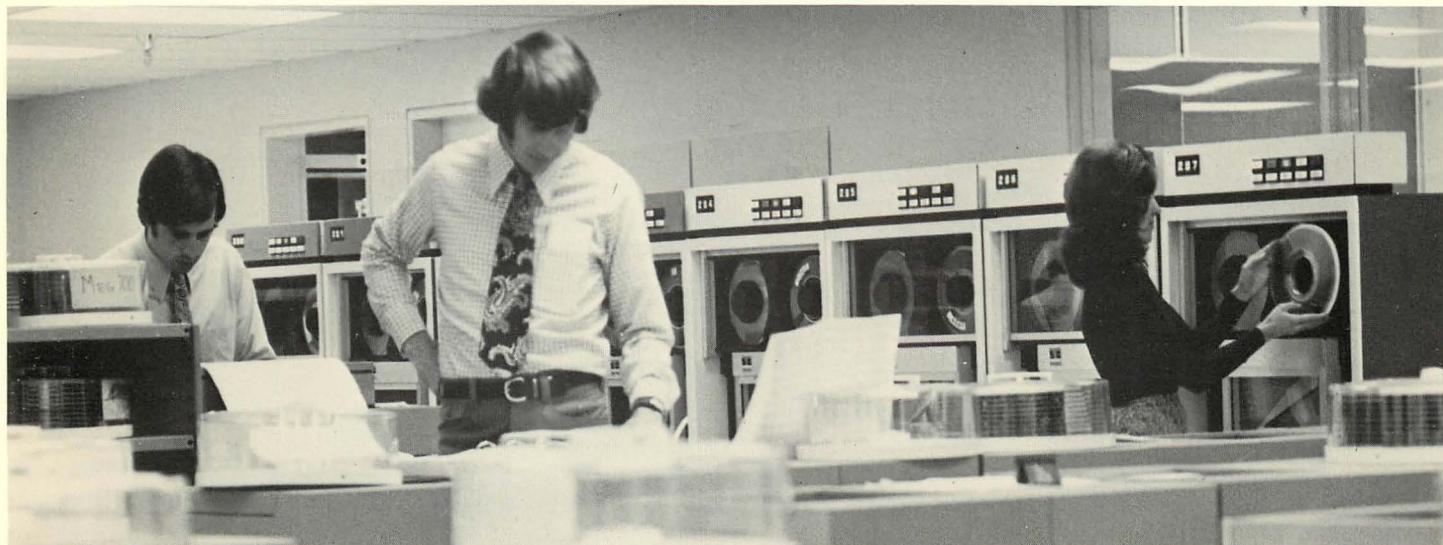
Software Services

Memorex exclusive for Memorex Customers

Tape Error Analysis—For Evaluating Tape Volume and Unit Reliability

Assists Evaluation of the Condition of Tapes and Tape Drives

Runs Under OS/360, DOS/360, OS/VS1, OS/VS2 or DOS/VS Systems



Generates Four Essential Reports:

1. Capture Audit Report
2. Transaction Report
3. Unit History Report
4. Volume History Report

Memorex exclusive for Memorex Customers



