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MAJOR EQUIPMENT CONFIGURATION FOR A MICROFICHE FACILITY: TWO ALTERNATIVES

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CANADA

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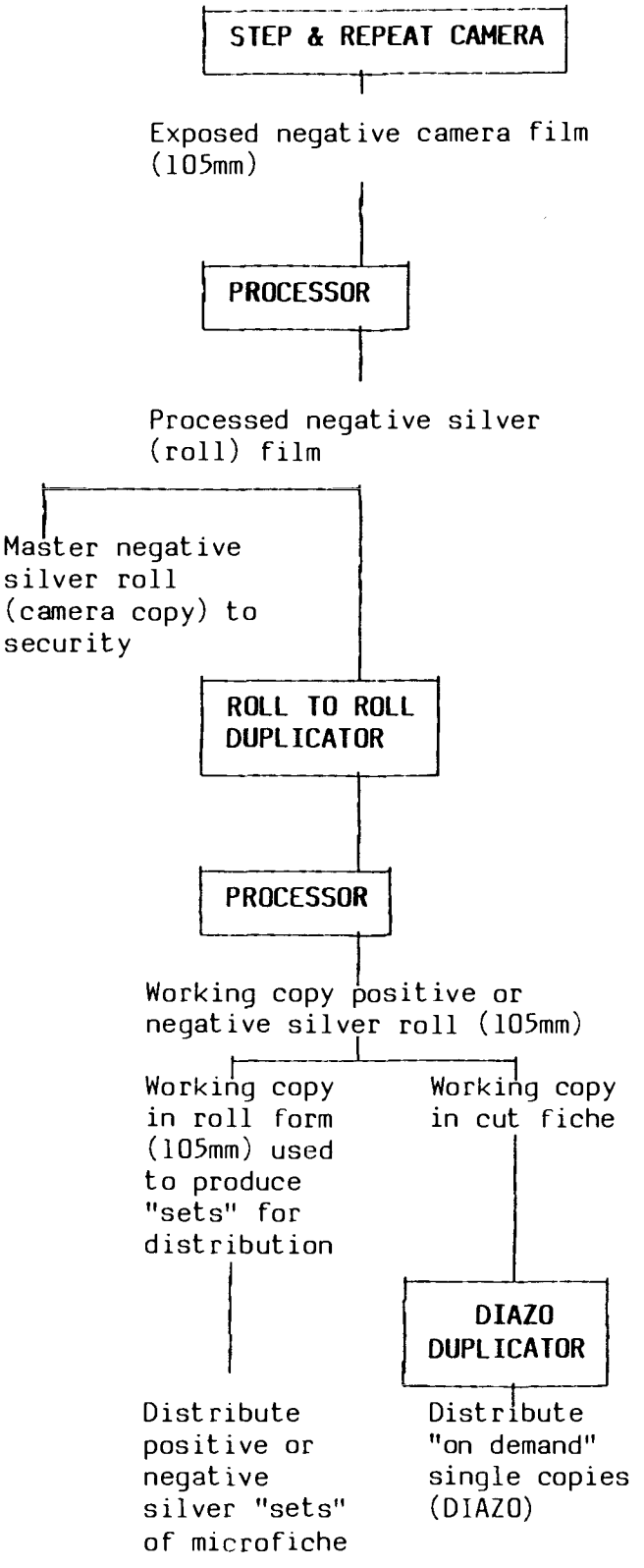
Cable: IRECENTRE / Telex 053-3753
Tel. (613) 236-6163

SYSTEM I

In System I microfiche are produced on a planetary, step-and-repeat camera, specifically the Bell and Howell Diplomat Camera. This produces complete microfiche including the title strip on a roll of 105mm film. After processing, inspection and duplication, this roll of microfiche is cut into individual microfiche, 105mm x 148mm (see attached example).

CONFIGURATION



1) CAMERA - Bell and Howell Diplomat step-and-repeat camera. Available in single or double frame. Double frame is recommended as it allows one to "shoot" two pages at a time which, in turn allows for faster through-put and results in less wear on the camera mechanism.

2) PROCESSOR - EXTEK 8102 Processor. Although this is a small processor it is recommended for its "deep tank" design and because the moving parts in contact with the developer and fixer are either non-corrosive or easily removed for cleaning. NOTE: This is important as any build-up of salts or dirt will scratch the film. NOTE: Other small processors (KODAK, BELL & HOWELL) are similar to the EXTEK and may be an alternate choice.

3) SILVER DUPLICATOR - EXTEK 3150 - Roll-to-Roll. If most requests for microfiche are expected to be complete sets rather than "on-demand" single copies, then a roll-to-roll duplicator is recommended over the microfiche-to-roll silver duplicator.

Depending on type of duplicating film used, either positive or negative copies can be produced.

4) DIAZO DUPLICATOR - The MICOBRA diazo duplicator is recommended because it uses aqueous ammonia and therefore requires no special ventilation. NOTE: A Diazo copy will appear the same as the Master (i.e. Positive master - positive Diazo copy) (other diazo duplicators; Canon, N.B., Bell & Howell may be substituted).

In addition to the above major equipment, the following items will also be required:

1. Densitometer
2. Microscope
3. Inspection Table (with built-in light source and take-up reels)

These items are essential as all film, be it from the camera or the duplicator, must be checked and inspected to ensure it meets certain standards and specifications.

4. Film cutter

5. Storage cabinets - for fiche and supplies

6. Supplies: this includes:

Camera film	-	20-100 ft. rolls
Silver Duplicate Film	-	8-500 ft. rolls
Chemistry	-	Fixer and Developer
Control Strips	-	
Cut Diazo Film	-	2,000 sheets
Ammonia	-	for the diazo duplicator
White gloves	-	for handling silver film (1 dozen)
Splicing tape	-	2 rolls (1 inch)
Eye lupe (8x - 10x)	-	for inspecting film

COST ESTIMATE FOR SYSTEM I, F.O.B. OTTAWA

	Cdn $ (approx)
Bell & Howell Diplomat Camera	65,000.00
Extek Model 8102 Processor	13,500.00
Extek 3150 Roll-to-Roll Silver Duplicator	25,000.00
MICOBRA M1 plus D12 Diazo Film Duplicator	6,000.00
Extek 410 Microfiche Cutter	15,200.00
Extek 4004 Densitometer	2,100.00
Microscope (with 100x lens)	500.00
Inspection Table (with light box & take-up reels)	1,000.00
20 rolls FUJI camera film 105 mm	800.00
Silver Duplicate Film 10,000 ft.	2,500.00
Chemistry Developer & Fixer	500.00
Diazo Film	300.00
Ammonia	10.00
White Gloves	50.00
Take-up reels and cores	--
Splicing tape	50.00
Eye lupe	10.00
Control strips	100.00

NOTE: Cost estimates for the storage equipment and the microfiche reader-printer have not been provided as they are not considered a part of the production cycle.

TOTAL $132,620.00

Advantages of System I

- It is a relatively fast system. The title of each microfiche is filmed at the same time as the text.

- Because the microfiche are in roll form they can be quickly and easily duplicated in large batches or sets.

- There are a minimum of steps required to produce the end product: filming, processing, inspection and duplication.

Disadvantages of System I

- The cost of the camera is approximately Cdn $65,000 (as opposed to Cdn $4,000 for the camera in System II)

- Titles have to be prepared ahead of time so that they can be filmed at the same time as the text; thus work may be held up while waiting for the titles to be prepared.

SYSTEM I

MICROFICHE PRODUCED BY
INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

CANADA

MICROFICHE PRÉPARÉE PAR
CENTRE DE RECHERCHES POUR LE DÉVELOPPEMENT INTERNATIONAL

SILVER MICROFICHE PRODUCED ON THE BELL AND HOWELL DIPLOMAT CAMERA I.E. SYSTEM I STEP & REPEAT

SILVER FILM
Handle with care:
Fingerprints and scratches will damage the film.

FILM ARGENT
Manier avec soin:
Les empreintes digitales et egratignures peuvent endommager la pellicule.

PO Box 8500 Ottawa Canada K1G 3H9 Telephone: (613) 236-6163 Cable: RECENTRE Telex: 053 3753

[redacted]S SCOBIE, G.M., POSADA, T.R. The impact of high-[redacted] 3/3
11[redacted]26 Latin America with special emphasis on Colombia: [redacted]

[redacted]

DIAZO COPY FROM SILVER MICROFICHE ABOVE

MICROFICHE PRODUCED BY
INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

CANADA

MICROFICHE PRÉPARÉE PAR
CENTRE DE RECHERCHES POUR LE DÉVELOPPEMENT INTERNATIONAL

DIAZO FILM
Do not expose to excessive light.

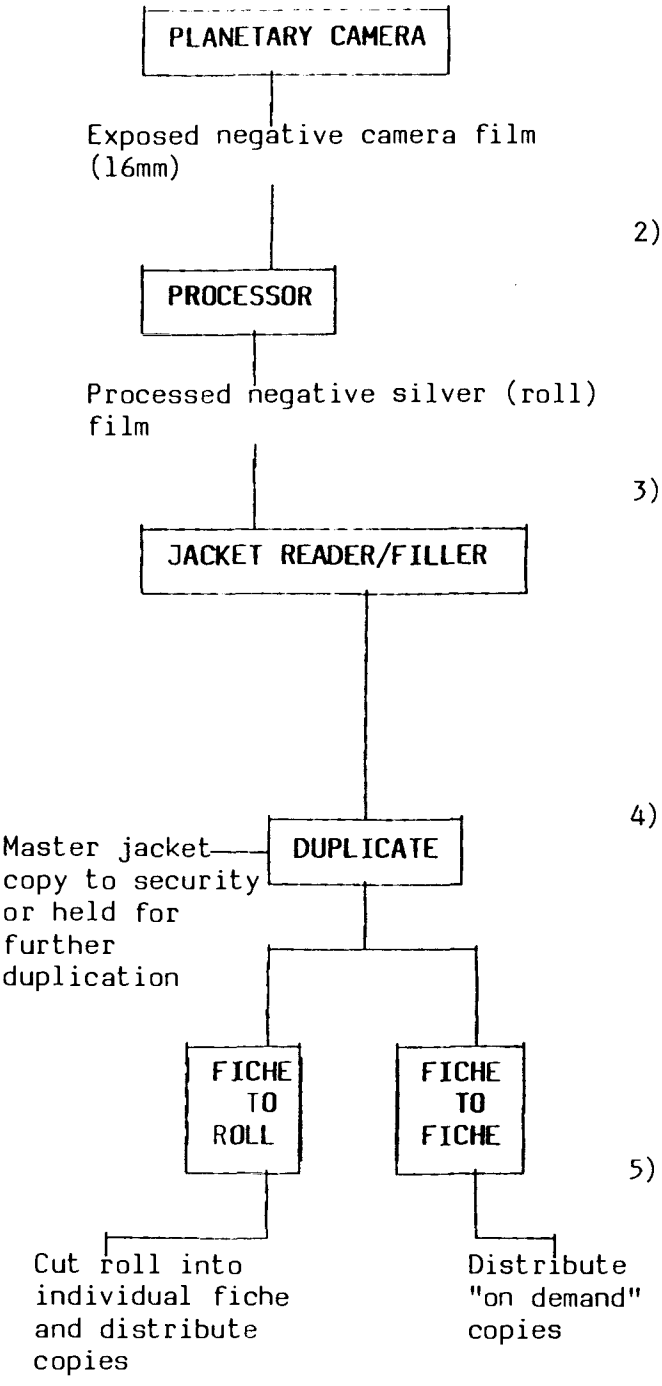
FILM DIAZO
Ne pas exposer a la lumiére excessive.

PO Box 8500 Ottawa Canada K1G 3H9 Telephone: (613) 236-6163 Cable: RECENTRE Telex: 053 3753

SYSTEM II

An alternative to System I would be the "jacket system". The same end product would be produced, but different equipment and supplies would be required. Basically, documents are filmed using a 16 mm planetary or rotary camera. After the roll of film is produced and inspected, a reader/stuffer/trimmer is used to insert the film into jackets which then serve as masters. Titles can be typed directly onto the jacket or onto strips and then stuck onto the jacket. From here the jackets are used to produce silver or diazo copies (see attached examples) for distribution and use, with the master jacket being retained for security and for further duplication. Although 60 frame jackets are an accepted international standard, equipment is now available to produce 98 frame format jackets.

CONFIGURATION



1) Camera: a planetary camera using 16 mm film. Possibly the Bell & Howell Filemaster. (for a 98 frame format the camera must have a 10 mm pull-down.)

2) Processor: Extek 8102 (see comments on page 3)

3) Jacket Reader/Filler: this equipment trims the film, loads it into the jacket and cuts the film, then steps down to the next channel or row. (for a 98 frame format the only supplier of jacket loaders is Motion Technology of the U.S.A.)

4) Duplicator: a fiche-to-fiche or fiche-to-roll duplicator can be implemented to produce a working copy and distribution copies. There is fiche-to-roll equipment available to produce either silver or Diazo copies.

5) From here on the jacket system (or System II) is similar to System I. (see page 3)

COST ESTIMATE FOR SYSTEM 11, F.O.B. OTTAWA

	Cdn. $	
Camera (Bell & Howell Filemaster)	4,000.00	
Processor (Extek model 8102)	13,500.00	
Motion technology jacket/trimmer/loader	4,000.00	
Silver Duplicator (Extek 3150)	25,000.00	
Diazo Duplicator (MICOBRA)	6,000.00	
Cutter (only needed if the fiche-to-roll duplicator is chosen)		(15,200.00)
Densitometer (Extek 4004)	2,100.00	
Microscope (with 100x lens)	500.00	
Inspection table	1,000.00	
20 Rolls Silver Camera Film 16mm	150.00	
Chemistry (Developer and Fixer)	100.00	
Jackets (10,000)	1,500.00	
White Gloves	50.00	
Take-up Reels and Cores	--	
Splicing Tape	50.00	
Eye Lupe	10.00	
Control Strips	100.00	

NOTE: Cost estimates for the storage equipment and the microfiche reader-printers have not been provided as they are not considered a part of the production cycle.

TOTAL	$ 58,060.00	(15,200.00)

Advantages of System II

- The actual filming of the documents is faster than on the larger Step & Repeat camera.

- Titles can be inserted before, during or after filming of documents.

- The cost of the camera is less than the larger Step & Repeat (by approximately Cdn $60,000).

Disadvantages of System II

- The additional step of stuffing the jackets is time consuming.

- There is no roll master copy. Duplication must be fiche-to-fiche of fiche-to-roll.

SYSTEM II

AGRIS
110426

SCOBIE, G.M., POSADA, T.R. The impact of high-yielding rice varieties in Latin America with special emphasis on Colombia. A preliminary report.

3/3

Blank or empty jacket 60 frame format (5 channels)

MICROFICHE PRODUCED BY
INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

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MICROFICHE PRÉPARÉE PAR
CENTRE DE RECHERCHES POUR LE DÉVELOPPEMENT INTERNATIONAL

60 frame format (5 channel) jacket with 16mm film inserted

SILVER FILM
Handle with care:
Fingerprints and scratches will

FILM ARGENT
Manier avec soin:
Les empreintes digitales

Migration and regional development

1 of 6

Diazo copy of 60 frame jacket microfiche

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MICROFICHE PRÉPARÉE PAR
CENTRE DE RECHERCHES POUR LE DÉVELOPPEMENT INTERNATIONAL

DIAZO FILM
Do not expose to excessive light.

FILM DIAZO
Ne pas exposer a la lumiére excessive.

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SYSTEM II

Blank or empty jacket 98 frame format (7

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CANADA

MICROFICHE PRÉPARÉE PAR
CENTRE DE RECHERCHES POUR LE DÉVELOPPEMENT INTERNATIONAL

98 frame format jacket with 16mm film inserted

SILVER FILM
Handle with care:
Fingerprints and scratches will

FILM ARGENT
Manier avec soin:
Les empreintes digitales

ARCHER, R. ANNEX TO REPORT ON THE [redacted] MICROGRAPHIC TRAINING COURSE, PHIL[redacted]UARY 1982. 1/5

A

a diazo copy of 98 frame jacket

MICROFICHE PRODUCED BY
INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

CANADA

MICROFICHE PRÉPARÉE PAR
CENTRE DE RECHERCHES POUR LE DÉVELOPPEMENT INTERNATIONAL

DIAZO FILM
Do not expose to excessive light.

FILM DIAZO
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PO Box 8500 Ottawa Canada K1G 3H9 Telephone: (613) 236-6163 Cable: RECENTRE Telex: 053 3753

Summary: System I and II

Both Systems are capable of meeting all current specifications and standards.

Both Systems are conditional upon a regular supply of clean water, at a constant temperature.

Both Systems require film processing, film inspection and some system for duplication.

Both Systems are capable of handling at least 8,000-10,000 reports or documents annually.

The more expensive System I can produce a neater, more professional appearing microfiche because the title is filmed with the microfiche.

The jacket system is considerably cheaper and may be more easily expanded (i.e. purchase of a 2nd camera).

In both systems alternative, but similar, equipment may be substituted depending on local availability and, suppliers.

Installation and maintenance/service to all equipment is an important factor when any suppliers are considered. Sometimes it may be worth paying a little more for a particular piece of equipment if there is a better chance of after sales service and regular check-ups.

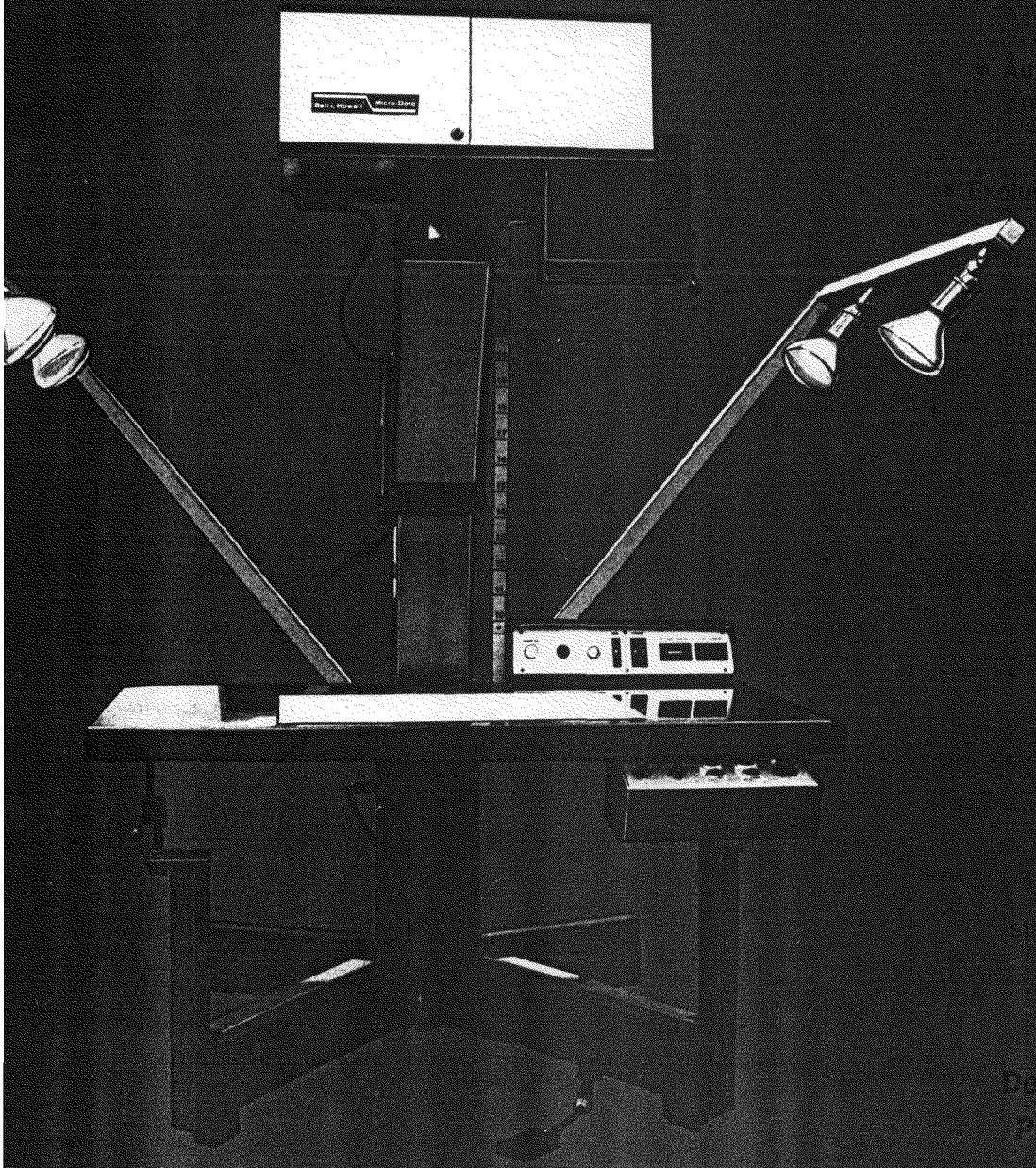
BUSINESS EQUIPMENT GROUP

2020 McDowell Road Chicago Illinois 60613

BELL & HOWELL

DIPLOMAT Microfiche Camera

STEP & REPEAT CAMERA FOR HIGHEST QUALITY INHOUSE MICROFICHE PRODUCTION



- Automatic 18 to 26 variable reduction ratio for uniform image size
- Exclusive Selectron automatic exposure control
- Automatic focus
- Automatic or manual column and row advance
- Automatic titling of frame after exposure
- Film cut signal automatically exposed
- Image field light for proper placement of documents
- Resolution meets or exceeds N.M.A. and COSATI standards
- 60, 72 and 98 page standard formats available

Designed by Microfiche Production Specialists

DIPLOMAT
Microfiche Camera

specifications:

FILM SUPPLY
100 ft. of 16mm film

REDUCTION RATIO
Motorized zoom lens with controls allows automatic selection of any ratio from 10 to 28 reduction ratio. Light intensity automatically changes as ratio changes for perfect exposure.

IMAGE FIELD SIGHT
Lens operator determines exact area and placement of original document, free of any extraneous data.

MICROFICHE FORMATS
Select from 105 to 98 frame formats.

FILM CUT-OFF SIGNAL
Automatic signal [illegible] to make auto-matic cutting of film at [illegible] frame.

TILTING
Adjustable [illegible] for [illegible] camera [illegible].

FOCUS
Automatic [illegible].

EXPOSURE CONTROL
Electronic [illegible] [illegible] by [illegible] automatically adjusts [illegible] [illegible] for [illegible].

RESOLUTION
Meets or [illegible] [illegible] by the Fed. Std. [illegible] and exceeds [illegible] through all reduction ratios.

IMAGE LOCATOR COUNTERS
Indicate [illegible] of row and column location of next document on microfiche.

AUTOMATIC COLUMN AND ROW ADVANCE
Depressing [illegible] automatically exposes [illegible] film. After exposure, film advances [illegible] row. When a row is filled, film [illegible] advances to the first column of the next row.

OPERATION CONTROLS
Bypass the automatic row and column advance, letting the operator choose his image locations. Needed when fiche contains more than one file.

EXPOSURE CYCLE TIME
One second [illegible].

DIMENSIONS
7 ft. wide, 7 ft. deep, 8 ft. 2 in. high.

POWER REQUIREMENTS
110-120 volts, 50-60 cycle AC, 20 amps.

WEIGHT
[illegible] lbs.

BUSINESS EQUIPMENT GROUP
6500 McCormick Road, Chicago, Illinois 60645

BELL & HOWELL

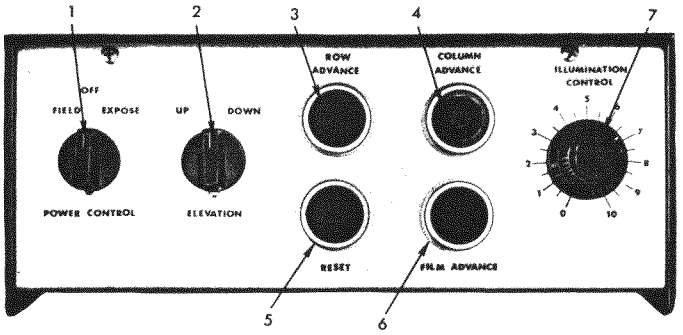
QUALITY, SPEED, ACCURACY AND ECONOMY FOR VOLUME MICROFICHE PRODUCTION

A microfiche system is ideal for any organization or institution that must distribute up-to-date ready-reference materials to multiple points quickly—either internally or to outside sources.

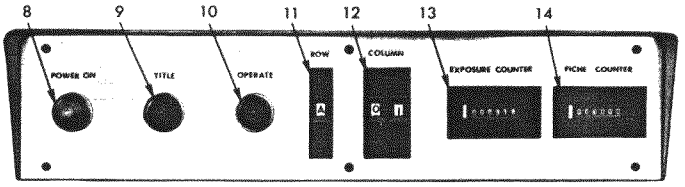
For years, Bell & Howell has been the recognized world leader in the production of microfiche. This experience has resulted in the development of the Bell & Howell Diplomat Camera, designed exclusively for microfiche system users who demand maximum quality and control of the dissemination and use of their information.

The Bell & Howell Diplomat has been carefully engineered and test-proven in both government and commercial production applications. It is a versatile, step and repeat exposure unit that photographs distribution documents, and produces the highest quality results.

CONTROL PANEL

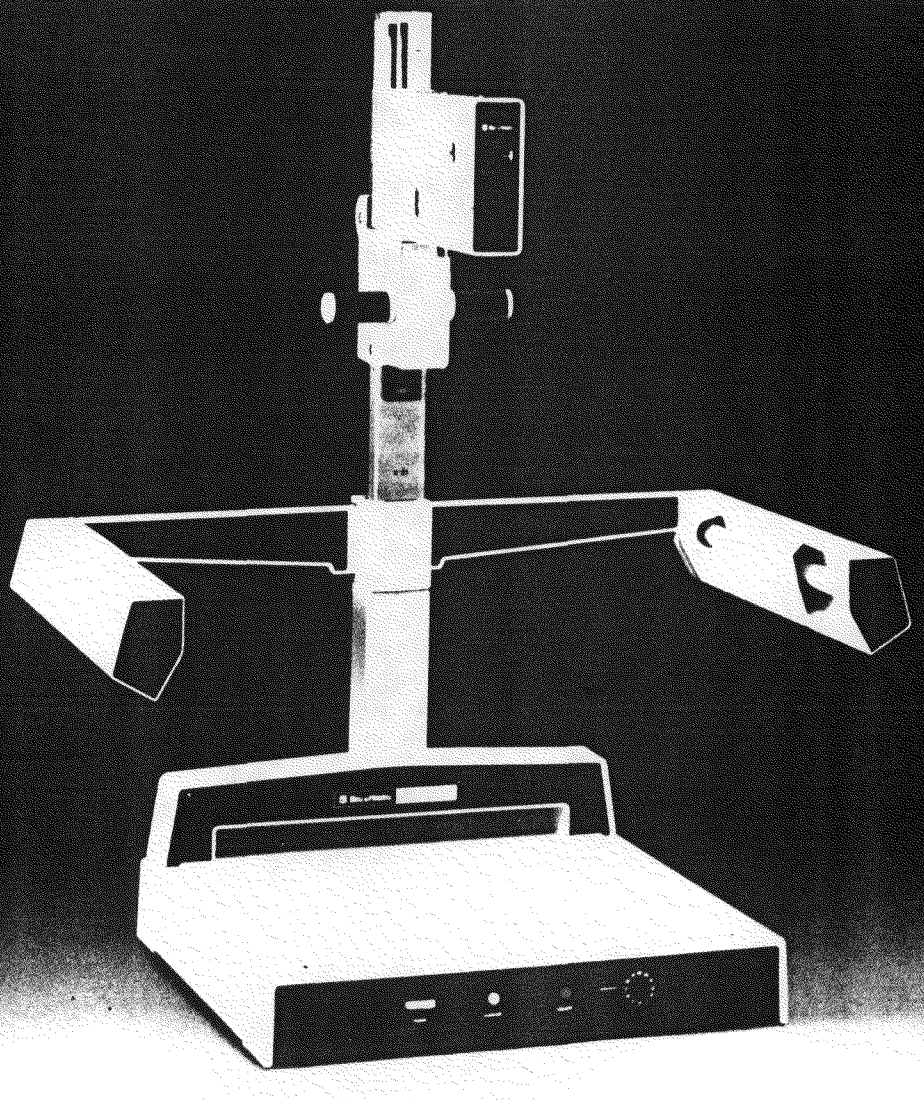


1. **POWER CONTROL**
2. **ELEVATION**—varies reduction ratio.
3. **ROW ADVANCE**—operator may advance to next row.
4. **COLUMN ADVANCE**—allows bypass of single frames.
5. **RESET**—advances fiche to Row A, Column 1 position prior to photographing.
6. **FILM ADVANCE**—bypasses that portion of film unavoidably exposed to light while being loaded.
7. **ILLUMINATION CONTROL**—adjusts intensity of exposure lamps.
8. **POWER ON**—red indicator light.
9. **TITLE**—signifies when fiche is in tilting position.
10. **OPERATE**—camera is ready for next exposure.
11. **ROW INDICATOR**—reads out vertical position of fiche.
12. **COLUMN INDICATOR**—reads out horizontal position of fiche.
13. **EXPOSURE COUNTER** — totals exposures.
14. **FICHE COUNTER**—totals fiche.



OPERATION INDICATOR PANEL

FileMaster® Microfilm Recorder



Compact Planetary Camera

The FileMaster® planetary camera provides the high resolution vital to active records systems such as insurance and mortgage applications. Although the recorder is practical for roll film and cassette applications, it is especially suited to unitized record systems where the need for sharp duplicates is a major consideration. The FileMaster camera's superb optical system assures high resolution at all points on the film image.

The filming of various sized documents is made easy with reduction ratios that can be changed in seconds – without changing camera or lenses.

And its simple operation assures high quality images with minimal operator training. The recorder requires no special preparation of originals, and its automatic exposure control compensates for differences in document color and texture.

With the FileMaster camera you can expand into new microfilm applications with one low-cost recorder. You can add optional features for blip coding to make the FileMaster recorder the first step in a high-speed, automated retrieval system.

BELL & HOWELL

FileMaster
Microfilm Recorder

Specifications

Cameras:
Interchangeable for departmentalization
COSATI Format: NMA Format

Reduction Ratios:
Standard in all cameras: 21:1, 25:1, 27:1 and 29:1

Focusing:
Automatically focused at all reductions

Resolution:
Minimum 120 lines per millimeter at all reductions

Depth of Field:
Minimum one (1) inch above copy table

Spacing:
COSATI: fixed pulldown of 1.17 cm
NMA: fixed pulldown of 1 cm

Photographic Area:
Up to 12-5/8" x 17-1/4" (32.06 cm x 43.81 cm) (1.17 cm pulldown)
Up to 10" x 13-1/2" (25.4 cm x 34.29 cm) (1 cm pulldown)

Item Counter:
Four digit resettable—see also Image Numbering
Seven digit non-resettable

Selectron Control:
Automatically adjusts exposure for document colors and textures

Copy Classification:
Compensates for film speeds; matches to automatic exposure system.

Controls:
Visual and audible signals indicate: end of film supply (override to allow for a few additional images); pushbutton spacing control, pushbutton photography control. Foot pedal photography control accessory is standard.

Film:
16mm x 100'
16mm x 215'

Light Source:
Two fluorescent lamps 15W each (rated 400 hours)

Power Requirements:
117V 60 cycle AC 1 AMP

Dimensions:
35" wide x 21" deep x 44" high (88.9 cm x 53.34 cm x 111.76 cm)

Weight:
56 lbs. (25.4 kg)

Options and Accessories

Work station floor stand

Extra cameras

Syncro-Search™ (blip) accessories
Syncro Mark (blip) copy board—Non-reflective, hard anodized black, complete with precision document registration guides; single and dual blips for Syncro-Search and/or Automaster filming.

Reflective single blip for Syncro-Search film

Reflective blips for Automaster system

Reflective document blip and illuminated new subject blip for Automaster systems.

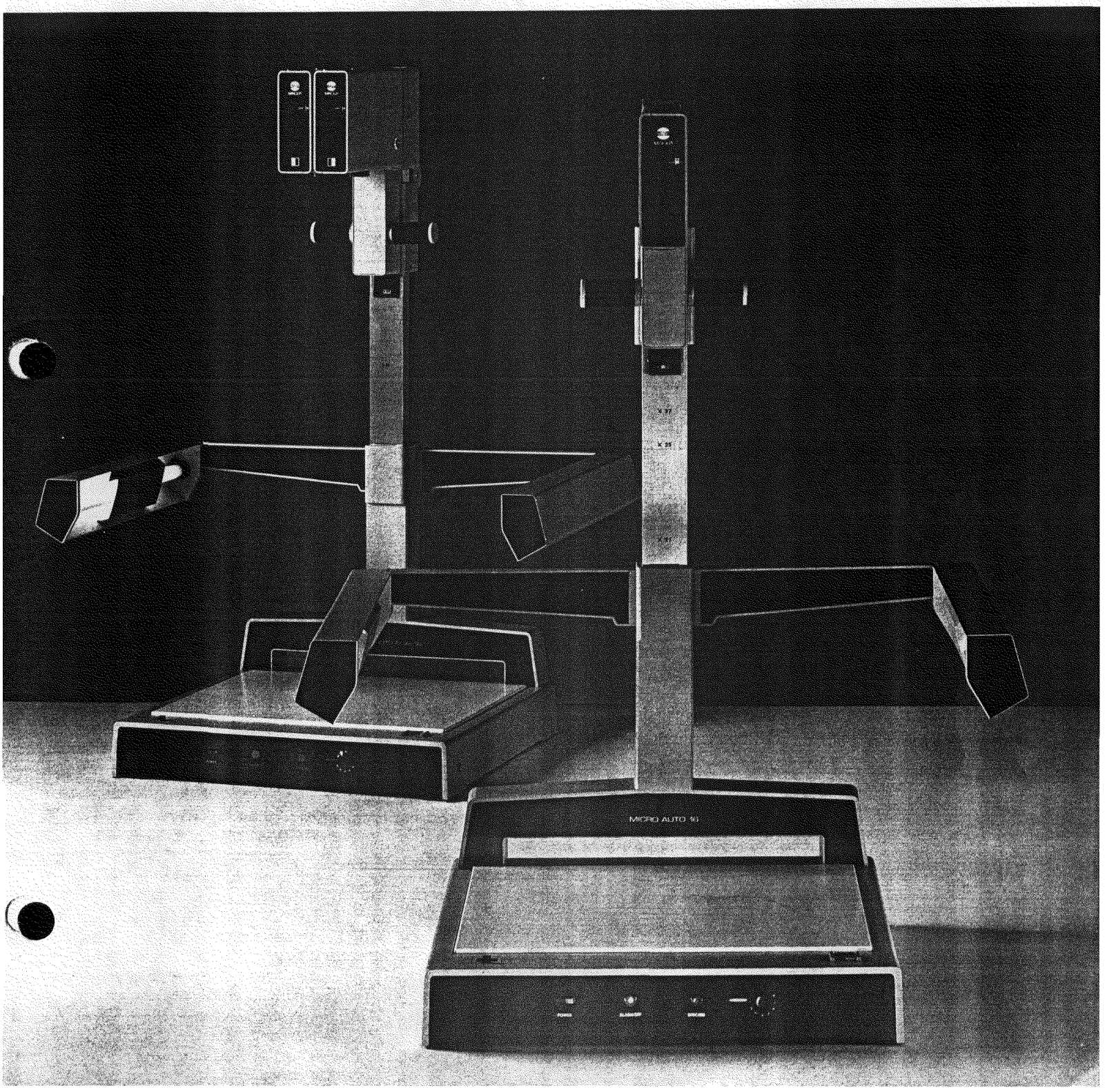
Image Numbering—4-digit counter placed into photo field. Individual digit resettable. Mounted into precision document registration guide at document top.

BELL & HOWELL CANADA LTD.
MICROIMAGERY DIVISION
45 JUTLAND ROAD, TORONTO, ONTARIO M8Z 2G8

MINOLTA

Micro Auto 16
Micro Auto Dual 16

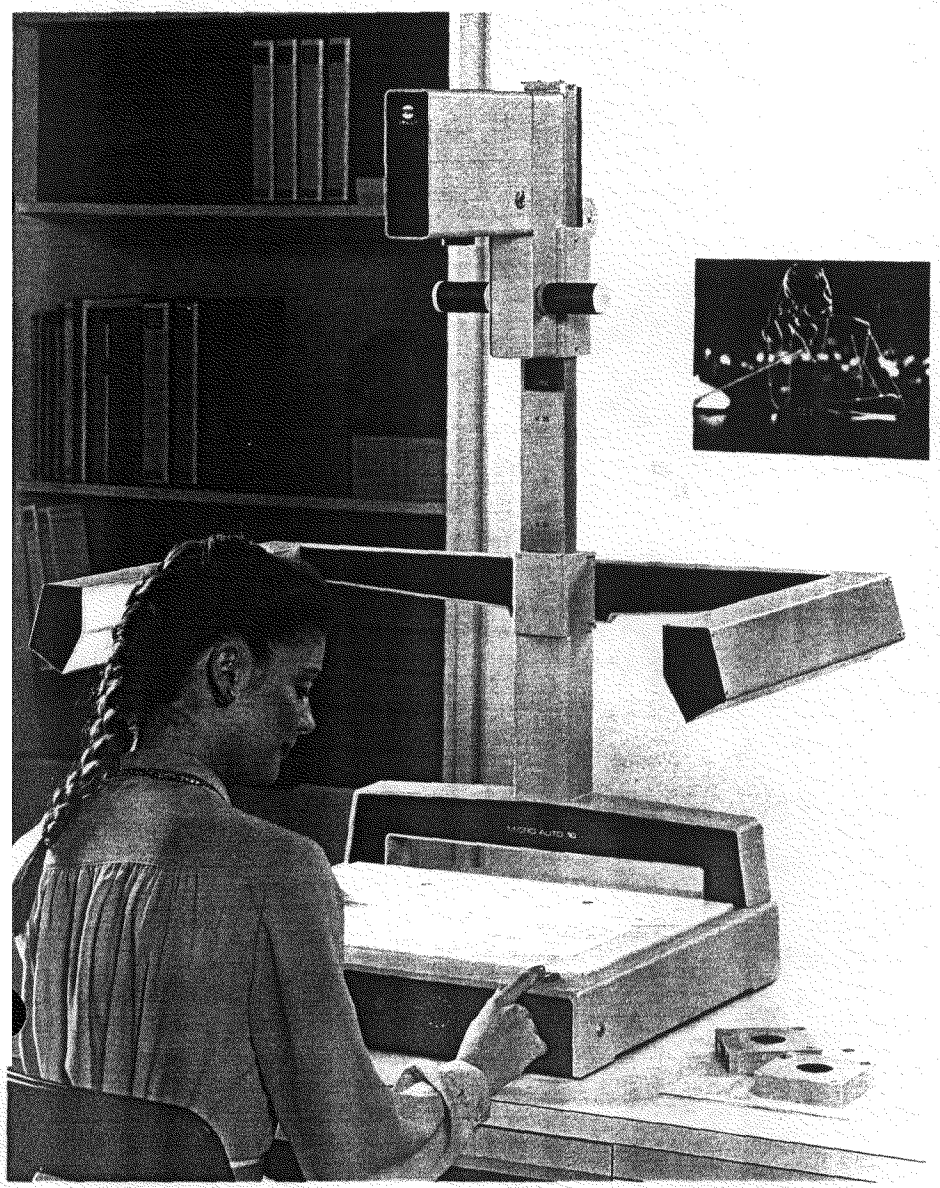
Single or Dual Film Units for 16mm roll microfilming
with Automatic Electronic Exposure Control.
Provide fast, simplified source document recording.



The Minolta Micro Auto 16.
The Minolta Micro Auto Dual 16.
Two superb microfilming systems with world-famous high-resolution Minolta optics plus automatic exposure and focusing features.

The Minolta Micro Auto 16 and Micro Auto Dual 16 simplify the preparation of 16mm film and jacket material with state-of-the-art electronics to provide always-perfect results.

At the heart of both microfilming systems is advanced Minolta technology in both optics and electronics. An extremely sharp Minolta lens gives an exceptionally high resolution at all reductions for superior clarity and contrast. Automatic electronic exposure control assures optimum exposure, with no manual settings required. And virtually any type of 16mm microfilm may be used.



Simplicity of operation is another key feature of these microfilming systems. Focusing is automatic through all reductions. All the operator has to do is center the document on the oversized copy-board, position the Film Unit and press the exposure button. Durable, twin fluorescent lamps illuminate the document, and advanced electronics automatically set the appropriate exposure. After recording, the film is advanced automatically to the next frame.

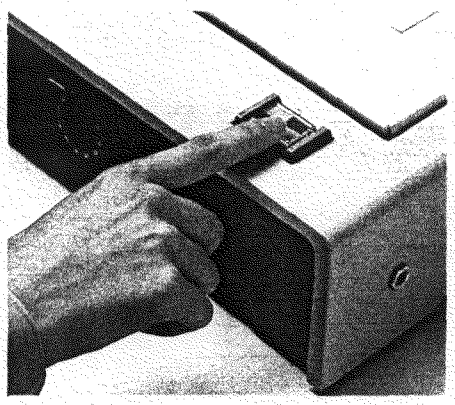
Other features include built-in film cutter; frame counter; film supply indicator; end-of-film alarm; spacing button; shutter speed control dial; plus pushbutton and foot-pedal exposure controls.

With all these features, the Minolta Micro Auto 16 and Micro Auto Dual 16 will enhance any office's microfilming operation. We'll be happy to show you how one of these compact microfilming units can meet all your microfilming needs.

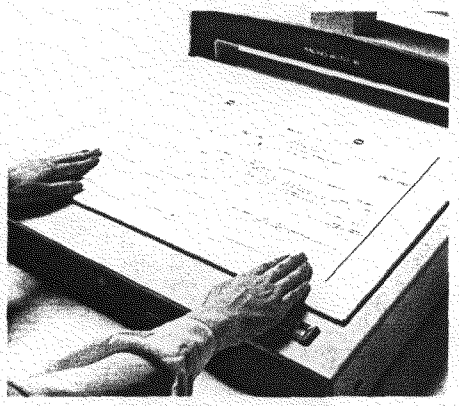
Micro Auto Dual 16

The Minolta Micro Auto Dual 16 is virtually identical to the Micro Auto 16, but with the added capability of two identical microfilms simultaneously. This provides one "working copy" and one "security file" copy with a single touch of a button. Naturally, one of the Micro Auto Dual 16's twin Film Units can be removed at any time to allow for single roll filming.

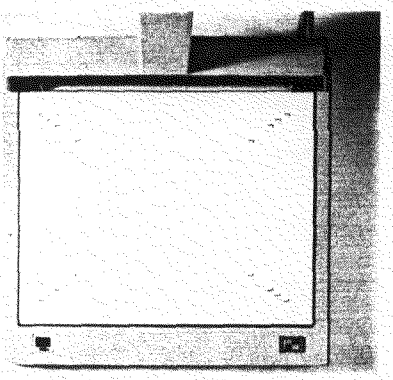
Ease-of-operation is a major advantage of the Minolta Micro Auto 16 and Micro Auto Dual 16.



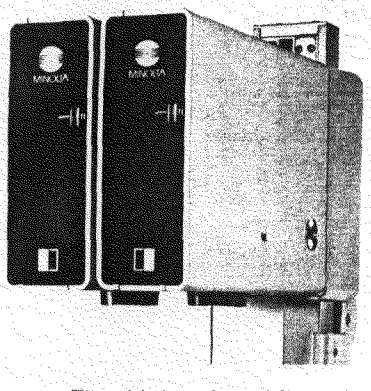
With their advanced electronics, the Minolta Micro Auto 16 and Micro Auto Dual 16 offer many benefits in getting the job done faster, better, more economically and simply. A single touch on the exposure button is all that's required for sharp, clear images. There's no fussing with aperture selection, shutter speeds or any other complicated settings in order to obtain good results, time after time.



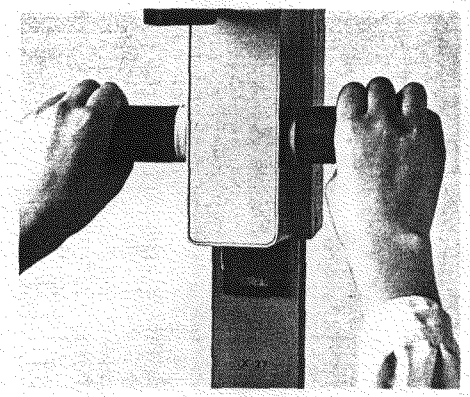
Advanced Minolta technological knowhow in optics and electronics is what sets the Minolta Micro Auto 16 and Micro Auto Dual 16 apart from any other microfilm recorder. Microfilming is done with a clarity, resolution and contrast that maintains its high level of consistency, frame after frame after frame. In short: you can always rely on the results.



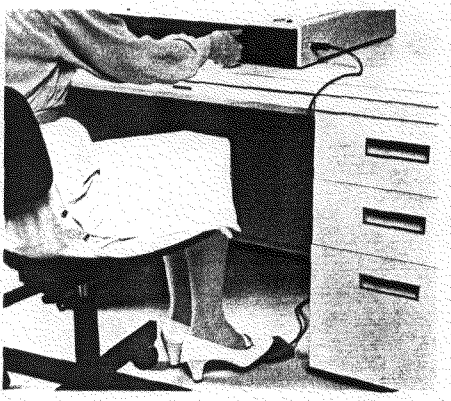
The oversized copy-board centers many different sized documents quickly. You can easily record documents from 231×315mm (9"×12¼") to 321×438mm (12½"×17⅛") with the Micro Auto 16, or up to 293×457.5mm (11½"×18") with the Micro Auto Dual 16...quickly, simply, efficiently. A generous depth-of-field setting allows the operator to film stacked documents with no change of Film Unit setting.



The dual Film Units of the Micro Auto Dual 16, like the single Film Unit of the Micro Auto 16, require no exposure selection by the operator: everything is done automatically. A built-in cutter in each Film Unit lets you remove any exposed portion of the film for immediate processing... a real time and money-saving feature!



Focusing at each reduction is done automatically. The Micro Auto 16 gives you four reduction steps: 21:1; 25:1; 27:1; 29:1. The Micro Auto Dual 16 gives you two: 26:1 and 31:1. Film Unit movement is easy, positive, and foolproof.



A foot pedal control is a standard accessory for both recorders, allowing the operator to free his or her hands for positioning of documents. This accessory is ideal for high volume applications by helping to speed the recording process.

SPECIFICATIONS

	Micro Auto 16	Micro Auto Dual 16
Type:	Planetary desk top	Planetary desk top (dual Film Units)
Film:	16mm×100 feet (non-perforated roll film)	16mm×100 feet (non-perforated roll film)
Frame counters:	4-digit resettable 7-digit non-resettable	4-digit resettable 7-digit non-resettable
Cutter:	Exakta style, built in	Exakta style, built in
Lens:	F4.5 28mm	F4.5 28mm
Shutter:	Electromagnetic, solenoid-operated	Electromagnetic, solenoid-operated
Reduction ratios:	21:1, 25:1, 27:1, 29:1	26:1, 31:1
Original size:	321×438mm (12½"×17⅛") max.	293×457.5mm (11½"×18") max.
Exposure control:	Automatic	Automatic
Light source:	Two fluorescent lamps (15W each)	Two fluorescent lamps (15W each)
Power source:	AC local voltage	AC local voltage
Power consumption:	70 VA	70 VA
Dimensions: (W×H×D)	889×558.8×1,117.6mm 35"×22"×44"	890×565×1,130mm 35"×21"×45⅙"
Weight:	27.3 kg (60 lbs.)	30 kg (66 lbs.)

FILM UNIT SPECIFICATIONS

Micro Auto 16	Pull Down	Image Format
Standard film unit	11.75mm	11.00×15.00mm
Special film unit—Series I	10.00mm	9.75×12.25mm
Special film unit—Series II	14.00mm	13.75×10.43mm
Special film unit—Series III	14.00mm	13.75× 8.25mm

Micro Auto Dual 16	Pull Down	Image Format
Standard film unit—left	11.75mm	9.60×15.00mm
Standard film unit—right	11.75mm	9.60×15.00mm

Specifications subject to change without notice

MINOLTA

Minolta Corporation, Micrographics Division, 101, Williams Drive, Ramsey, NJ 07446, U.S.A.
Minolta Camera Co., Ltd., Business Equipment Division, 30, 2-Chome, Azuchi-Machi, Higashi-Ku, Osaka 541, Japan

Printed in Japan

KODAK STARFILE

RV-3 Microfilmer

• Small planetary 16 mm microfilmer • Used for microfilming business and legal-size documents up to 12.6″ x 16.3″ (32.0 x 41.4 cm) • Easy to use tabletop operation • Automatic exposure control • Removable film unit • Choice of two reduction ratios, 24X and 30X • Image-mark capability at three different levels

KODAK STARFILE

RV-3 Microfilmer

It offers you these features:

Compactness: The small size of the RV-3 Microfilmer makes it ideal for tabletop operation where space is at a premium.

Inexpensive storage of letter- or legal-size documents on microfilm: Up to 2,500 documents (8½" x 11") (21.6 x 27.9 cm) can be recorded on a 100-foot roll of RECORDAK AHU Microfilm or up to 5,200 documents if a 215-foot roll of RECORDAK DATAPAK AHU Film is used.

Automatic exposure control: Fully automatic light sensor regulates the shutter speed to set optimum exposure for each document through use of a photocell.

Reduction ratios: Two reductions available—1:24 for letter-size documents and 1:30 for legal-size documents. Each lens is identified with the reduction.

Removable film unit: Film units are interchangeable so that multi-department film records can be maintained separately.

Operator controls: Power on-off switch, exposure button, and alarm light simplifies microfilmer operation. A minimum amount of instruction is needed for operator training.

Minimum document size:
(For proper function of automatic exposure control.) 3x1¾" (7.6x4.5 cm)

Maximum document size:

	24X Lens	30X Lens
Without counter/ no blips	11.7 x 10" (29.7 x 25.4 cm)	16.3 x 12.6" (41.4 x 32.0 cm)
Without counter/ with blips	11.7 x 10" (29.7 x 25.4 cm)	14.7 x 12.6" (37.3 x 32.0 cm)
With counter/ no blips	11.7 x 9" (29.7 x 22.9 cm)	16.3 x 11.6" (41.4 x 29.5 cm)
With counter/ with blips	11.7 x 9" (29.7 x 22.9 cm)	14.7 x 11.6" (37.3 x 29.5 cm)

Specifications:

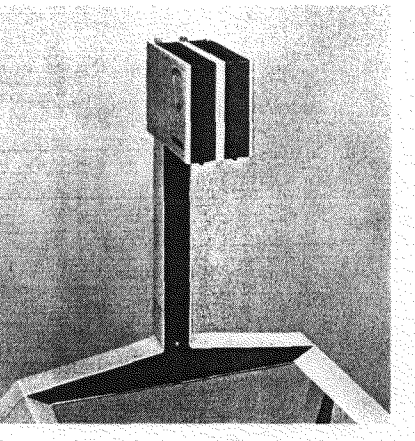
Film: Each film unit accepts one roll of 100-foot (30.5 m) or 125-foot (38.1 m) 16 mm RECORDAK AHU® Microfilm, or a roll of 215-foot (65.5 m) RECORDAK DATAPAK AHU Film.

Dimensions:
Height: 40.4" (102.6 cm)
Width: 29.6" (75.2 cm)
Depth: 19.8" (50.2 cm)
Weight: 45 lbs (20.4 kg)

Electrical requirements:
104 to 127 volts, 60 Hz, 1 amp, ac
or
113 to 127 volts, 50 Hz, 1 Amp, ac
UL-Listed, CSA-approved

Color: Sandstone beige, charcoal brown, and orange

Accessories:
- KODAK STARFILE Dual Film Adapter
- KODAK STARFILE VRC Recording Counter
- KODAK STARFILE CV-3 Film Unit
- KODAK STARFILE 24C, R and L Lenses
- KODAK STARFILE 30C, R and L Lenses
- KODAK Footswitch Kit, K-3585



Dual microfilming: Adding a KODAK STARFILE Dual Film Adapter allows simultaneous exposure of two rolls of film. One to be used for reference, the other for off-premises safekeeping.

EASTMAN KODAK COMPANY
Business Systems Markets Division
Rochester, New York 14650
Kodak Canada Inc./Toronto, Ontario M6M 1V3

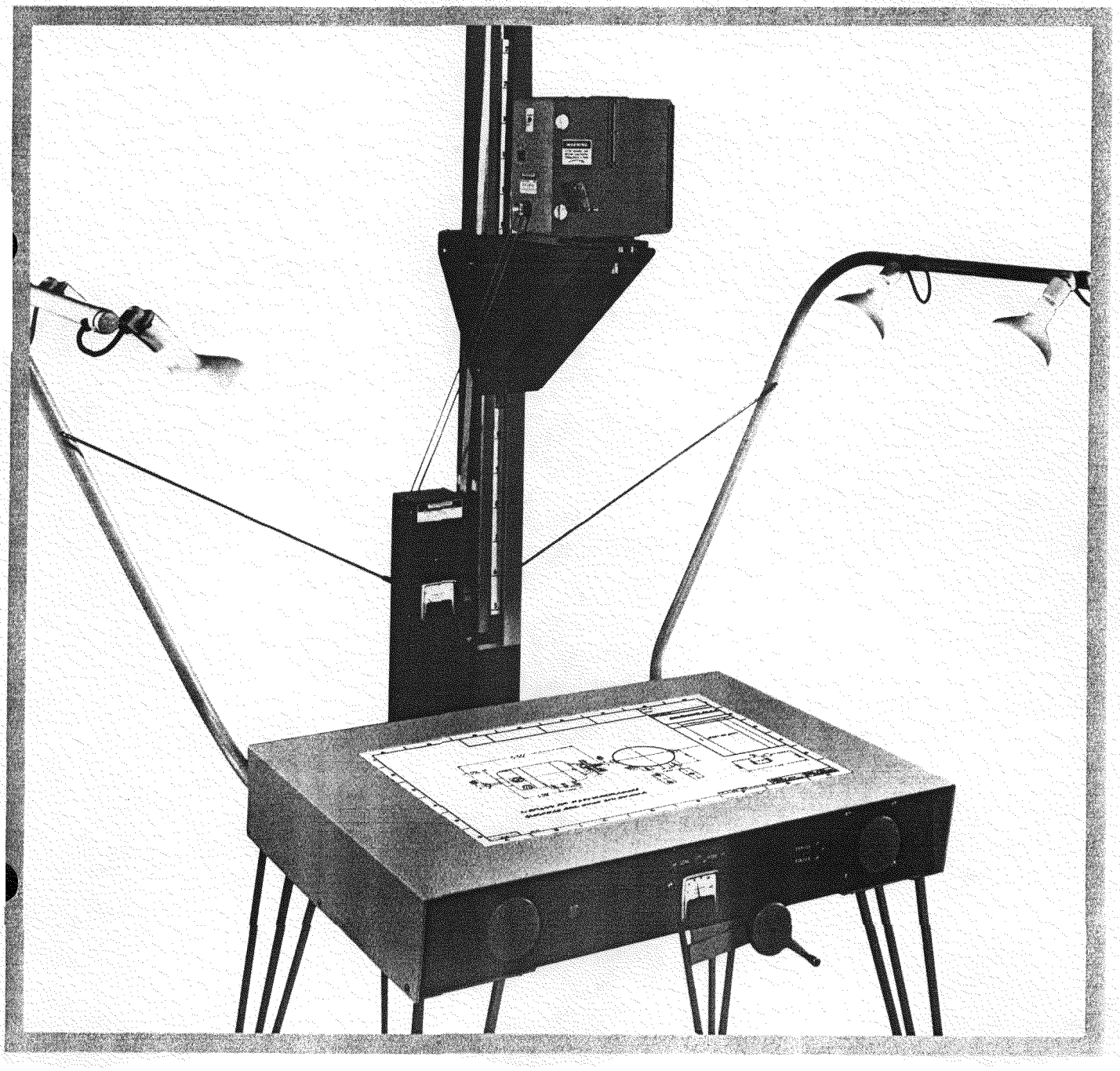
A-1972 15K381

Kodak, Recordak, Starfile, Datapak, and AHU are trademarks.

Printed in USA

RECORDAK MICRO-FILE
MACHINE, Model MRD-2

• Precision-engineered for microfilming bound or unbound records on 16 mm or 35 mm film • Superb image quality • Easy to operate • Automatic focusing through the 5:1 to 21:1 reduction range • Reduces documents up to 26¼" x 36¾" • Your ideal choice for microfilming real property documents, vital statistics, maps, drawings, newspapers, bound books, and other records requiring the flexibility of a flatbed microfilmer.



RECORDAK MICRO-FILE
MACHINE, Model MRD-2

It offers you these features:

Reduction Ratio: Ranges from 5:1 to 21:1. Permits microfilming documents up to 26¼" x 36¾".

Film Unit: Uses 100-foot rolls of 35 mm microfilm and can be modified for 16 mm film with an accessory conversion kit. Rotatable through 360° to photograph documents horizontally or vertically along the film. Interchangeability makes possible single-subject or separate-department microfilming.

Exposure: A photocell measures the illumination and indicates the correct exposure on a null-type meter. A single touch of a switch trips the fixed-speed shutter, actuates the exposure counter on the film unit, and advances the film. The switch is suitable for hand or foot operation.

Photographic Field Indicator: The area to be photographed is defined by a rectangular light pattern projected through the lens onto the copyboard. By operator control of the photographic field, the film advance automatically adjusts to use only the amount of film required for the size of the document.

Optical System: A KODAK EKTAR Lens (LUMENIZED) 63.3 mm at f/8 produces fine-line image definition for viewing on a reader screen or for producing paper prints and film duplicates.

Illumination: Four 150-watt reflector flood lamps. Illumination level is controlled by a variable auto-transformer. The lamp bracket arms pivot and can be moved out of the way when not in use.

Specifications:

Color: Combines covert beige, light tan, and dark tan.

Dimensions:

Height—102" Depth—34"
Width—72" Weight—165 lb

Electrical: 117V AC, 50/60 Hz, 8A, Underwriters' Laboratories, Inc. Listed, Canadian Standards Association approved.

Accessories:

Extra film units, 16 mm conversion kit, electric counter kit, column extension kit.

EASTMAN KODAK COMPANY
Business Systems Markets Division
Rochester, N.Y. 14650
Kodak Canada Limited/Business Systems Markets Division/Toronto, Ontario

Canon
MICROGRAPHICS

CANON CANOFILE 100

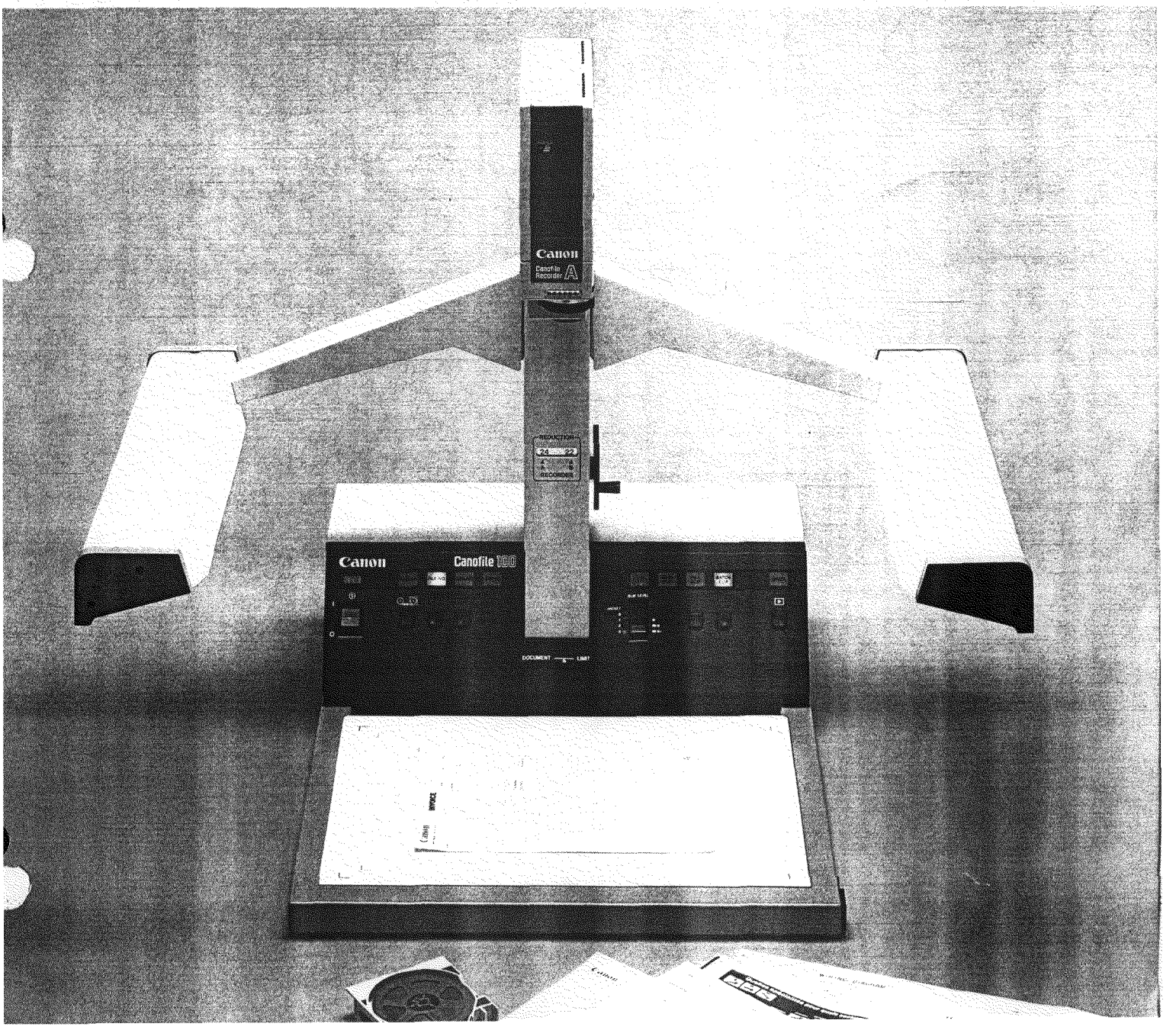
Canon Canofile 100, an advanced, compact 16mm micrographic recorder, is designed for source documents sized up to A3/11″×17″.

CAR SYSTEM COMPATIBLE—With a camera incorporating the latest electronics for total filming control, Canofile 100 provides trilevel blip marking coupled with 6-digit frame number exposure, making it an ideal input unit for computer assisted retrieval systems (CAR).

INTERCHANGEABLE RECORDING UNIT—Two types recorder units are provided for Canofile 100. CAR Compatible Recorder A exposes blip-coded images with frame numbers. Alternatively, it records a cutting mark every 14 frames for use with an automatic jacket inserter. Recorder B produces standard blipless images with frame numbers for ordinary roll or jacket applications. For further convenience, interchange of the recorder unit allows shared use of the main frame by separate divisions in a company and for different file purposes.

QUALITY IMAGES—Canon's high-resolution lens and newly designed automatic exposure control system always assures sharp and excellent contrast images.

SIMPLE OPERATION—Film loading, selecting reduction, focusing, and placing documents are all straightforward. Indications and controls are centralized and conveniently located on the unit's front panel. Film leader/trailer making, numbering, blip level selection and spacing are all done simply by push button control on the panel. Audible signal for warning is also provided.



EASY INSTALLATION—Heatless, low-wattage fluorescent illumination to increase operator's productivity in any office. Lighting units may be removed when existing light is sufficient. The whole unit divides into three parts for easy transportation. Minimum maintenance is assured by built-in microcomputer.

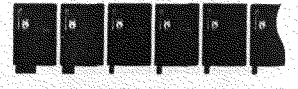
Frame Numbering:

Automatically 6-digit frame numbers can be exposed on the film everytime the hand or foot exposure switch is pressed. After first setting the counter manually, each exposure advances the last four digits serially, while the first two digits remain stationary for coding purposes. A switch to hold the last four digits, when required for FILE NO. mode, is also provided.

Trilevel Blip Marking by Recorder A:

Set the blip level selector at level 3 and press BATCH BLIP button. When the exposure switch is pressed, the large BATCH blip is exposed with the first frame, then is automatically replaced with the medium FILE blip for the following frame. From the third frame, the small PAGE blip is exposed each time. Press FILE BLIP button for the leading page of each group of documents of a batch.

When frame numbering is the hold mode (FILE NO. button), the number is advanced only when a BATCH or FILE blip is exposed.



Trilevel Blipping
batch-file-page

Bilevel Blipping
file-page

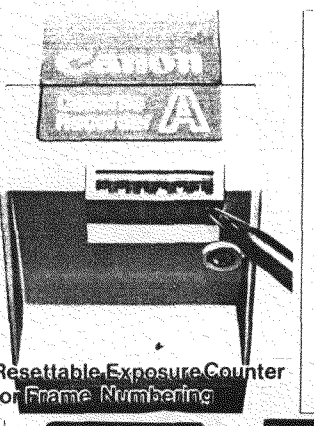
Standard Page Blip

* Cutting mark size in Jacket mode

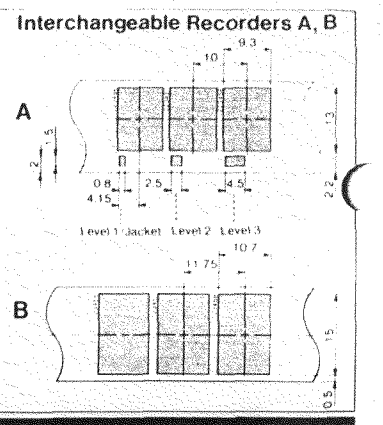
Specifications of Canon Canofile 100

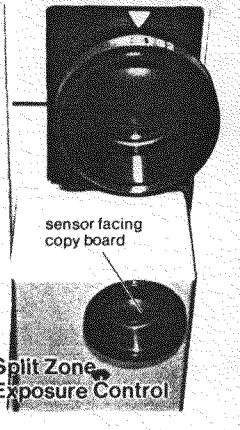
Type:	Desktop planetary microfilmer with interchangeable recorder unit
Film:	16mm-100ft (30.5m), or thin base films on standard 93mm dia reel
Reduction Ratio:	3 set positions *
Recorder A	24X for up to 230mm × 322mm (9" × 12-5/8")**
	32X for up to 293mm × 409mm (11-1/2" × 16")
	34X for up to 325mm × 446mm (12-3/4" × 17-1/2")
Recorder B	22X for up to 230mm × 322mm (9" × 12-5/8")**
	28X for up to 293mm × 409mm (11-1/2" × 16")
	30X for up to 325mm × 446mm (12-3/4" × 17-1/2")
	* Reduction change by turning the adjustment wheel on camera column to raise/lower recorder unit
	** Exposure area printed on copyboard
Indexing:	1) 6-digit frame number resettable on recorder unit
	2) Trilevel blip marking in Recorder A
	3) Cutting mark for jacketing in Recorder A
Focusing:	Three simple lens settings, each corresponding to one of the three recorder set positions
Exposure Control:	Automatic adjustment of shutter speed according to intensity of reflected light from document on copyboard, by measuring four points and selecting optimum reading.
Filming Cycle:	1.2 seconds per frame for normal document density
Switches and Controls:	Two-mode numbering selector buttons, Five-level blip selector, Leader/Trailer button, Space button, Two blip buttons
Indicators:	Exposure counter, Film supply indicator, Film in motion indicator, Film end warning buzzer, Film empty warning lamp
Illumination:	2 × 15W fluorescent lamps
Electrical Requirements:	120V 60Hz, 220V 50Hz, or 240V 50Hz; 400W
Dimensions:	777mm × 855mm × 755mm
(H × W × D)	(30-1/2" × 33-5/8" × 29-3/4")
Weight:	25kg (55.1 lb)
Others:	Foot switch (standard), RS232C interface kit (optional)

These specifications may be modified without prior notice.

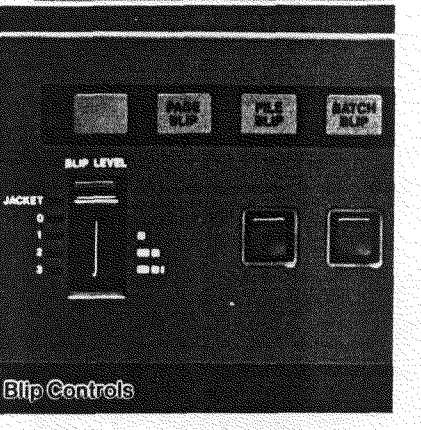


Resettable Exposure Counter for Frame Numbering

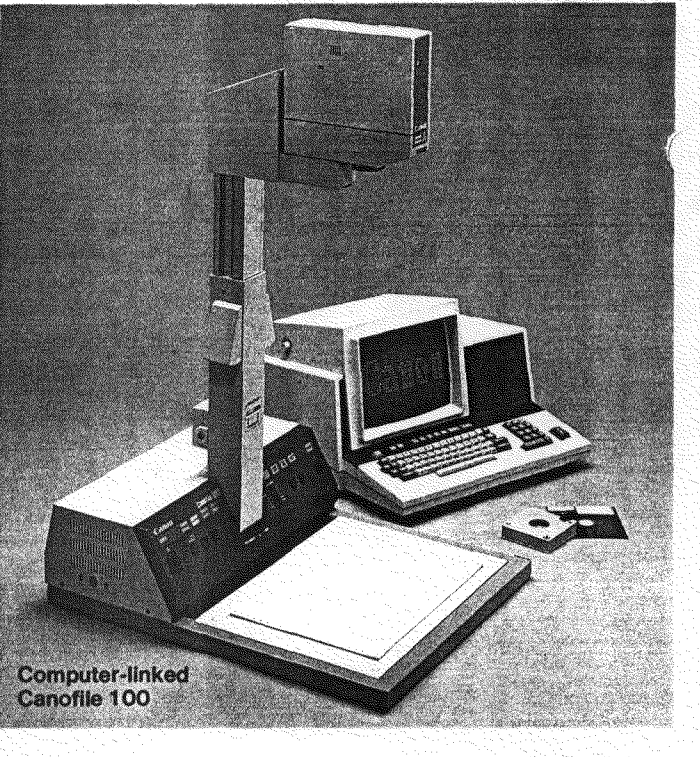




Split Zone Exposure Control



Blip Controls



Computer-linked Canofile 100

Canon

CANON INC.
7-1 NISHI-SHINJUKU 2-CHOME, SHINJUKU-KU, TOKYO 160, JAPAN

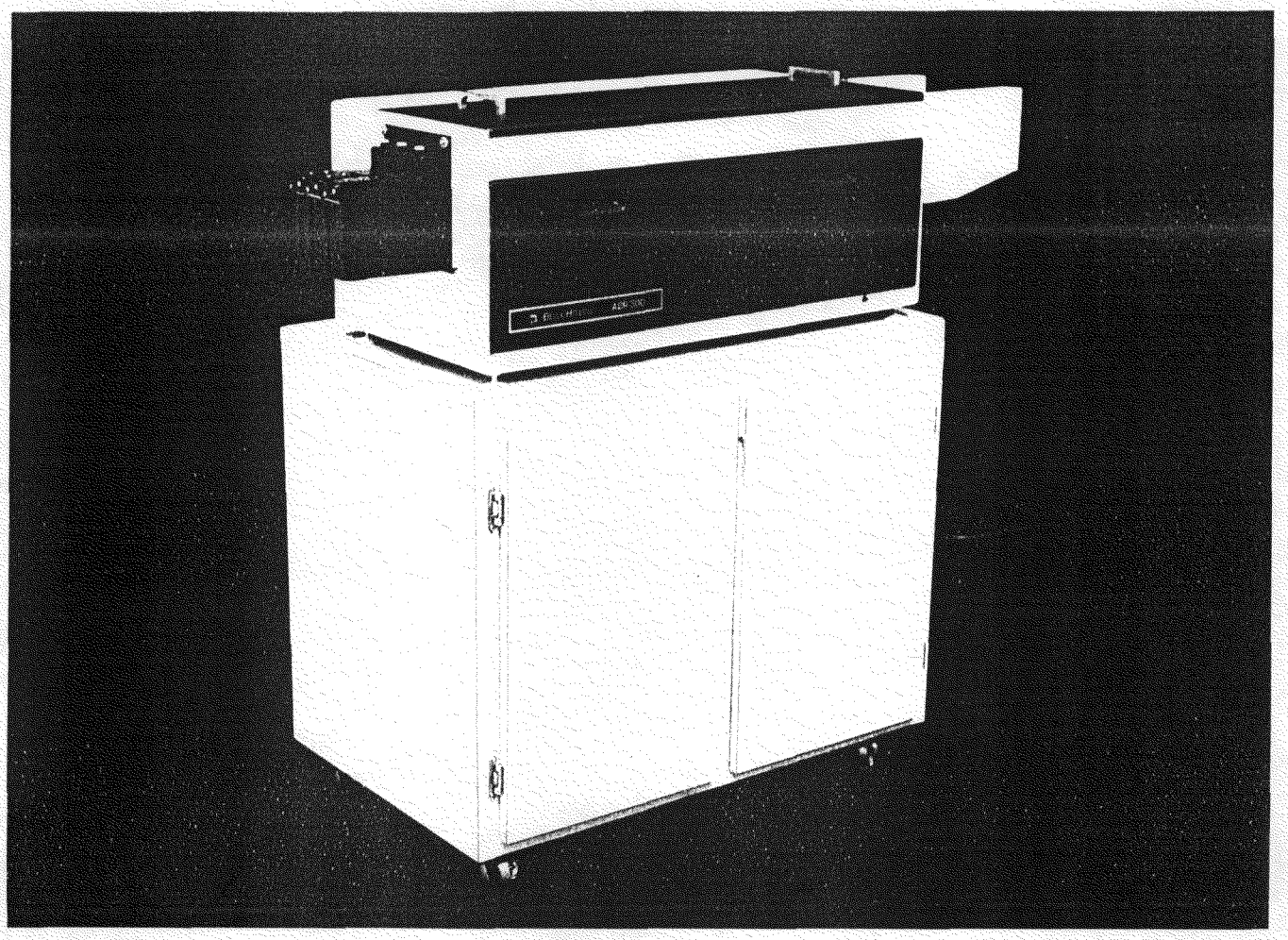
CANON EUROPA N.V.
VAN LEIJENBERGHLAAN 221, 1008 AC AMSTERDAM, THE NETHERLANDS

CANON U.S.A. INC.
ONE CANON PLAZA, LAKE SUCCESS, N.Y. 11042

CANON CANADA INC.
3245 AMERICAN DRIVE, MISSISSAUGA, ONTARIO L4V 1N4, CANADA

CANON LATIN AMERICA, INC.
APARTADO 7022, PANAMA 5, REP. OF PANAMA

CANON AUSTRALIA PTY. LTD.
22 LAMBS ROAD, ARTARMON SYDNEY 2064, AUSTRALIA



ABR™-300 Microfilm Processor

An ideal companion to Bell & Howell's Classic or ABR-100 microfilm recorders, the ABR-300 processor accommodates easy-to-use Cartridge-Pak™ film as well as 16mm roll film with antihalation undercoat. The unit's simple drop-in loading system processes film in just minutes.

Its speed and low-cost processing capabilities provide fast access to information—records are immediately available for retrieval and viewing. The processor's "straight-through" feed design assures positive and smooth operation.

The ABR-300 processor is ideal when short lengths of film require processing and when time is an important consideration. Archival permanence of film is maintained along with consistent density control.

Completely self-contained, the new processor is operated in normal lighting—there's no need for special darkroom facilities. The random loading feature makes it possible to load a Cartridge-Pak or a conventional roll of film while another is being processed. You can process up to three Cartridge-Paks at one time.

ABR-300
Microfilm Processor

Operating Characteristics

Film Transport Speed:
2.5 feet per minute (.88m/minute)

Water Requirements:
0.5 gallon per minute (1.9L/minute) when mixing valve is used

Drain Type:
Gravity

Solution Temperatures:
95°F to 100°F (35°C to 43°C)
Thermostatically controlled

Warm-Up Time:
10 to 12 minutes

Supplies and Accessories

Concentrated Developer and Fixer
Mixing Valve
ABR-300 Load Box
Load Boxes for a Variety of Formats
Light Inspection Table
Console with Storage Area and Casters

ALL SPECIFICATIONS LISTED HERE ARE SUBJECT TO CHANGE WITHOUT NOTICE

Specifications

Color:
Fog white and charcoal gray

Film Capacity:
Three Cartridge-Paks or combinations of Cartridge-Paks and 16mm roll film

Solution Tanks:
Three; each with 0.5 gallon (1.9L) capacity

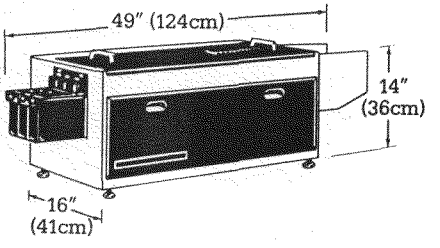
Type of Film Processed:
Bell & Howell's Cartridge-Pak or 16mm to 105mm roll film widths; 5 mil or 2.5 mil base thickness

BTU's Per Hour:
775 (Average)

Power Requirements:
110 Volts, A.C., 50/60HZ, 12 Amp.

Safety Approval:
Underwriters Laboratory

Weight:
70 lbs. (32 kgs)



MICROFILM PRODUCTS DIVISION
6800 McCormick Road Chicago, Illinois 60645

BELL & HOWELL

BELL & HOWELL

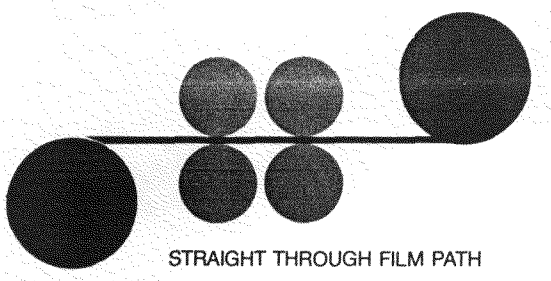
FILEMASTER™ II
Microfilm Processor

Automatically processes films with or without dye back coating in your own office . . . all with archival permanence. Film taken directly from your camera can be processed in a matter of minutes with total security.

Film may be loaded quickly and easily in normal room light. A self-threading straight-through film path eliminates the need for film leaders. Random film loading and the ability to process all film widths from 16mm to 105mm make the FileMaster II camera a truly versatile Microfilm Processor.

Operating and maintaining the FileMaster II processor is so simple that anyone on your staff can quickly learn to perform these functions.

FILEMASTER™ II
Microfilm Processor



STRAIGHT THROUGH FILM PATH

Specifications:

Film Capacity:
Will process three 100 foot rolls of 16mm film in parallel with random loading; or, 100 foot rolls of film in 16, 35, and 105mm widths.

Film Transport Speed:
1 to 8 feet per minute (0.3 to 2.4m/min.)

Water Requirements:
1.5 gallons per minute (5/7L/min.)

Drain Type:
Gravity drain.

Solution Tanks:
4 solution tanks with 1 gallon (3.8L) capacity each.

Solution Temperatures:
95°F to 110°F (35°C to 43°C) — Thermostatically controlled.

Type of Film Processed:
Negative, films with or without dye back coating.

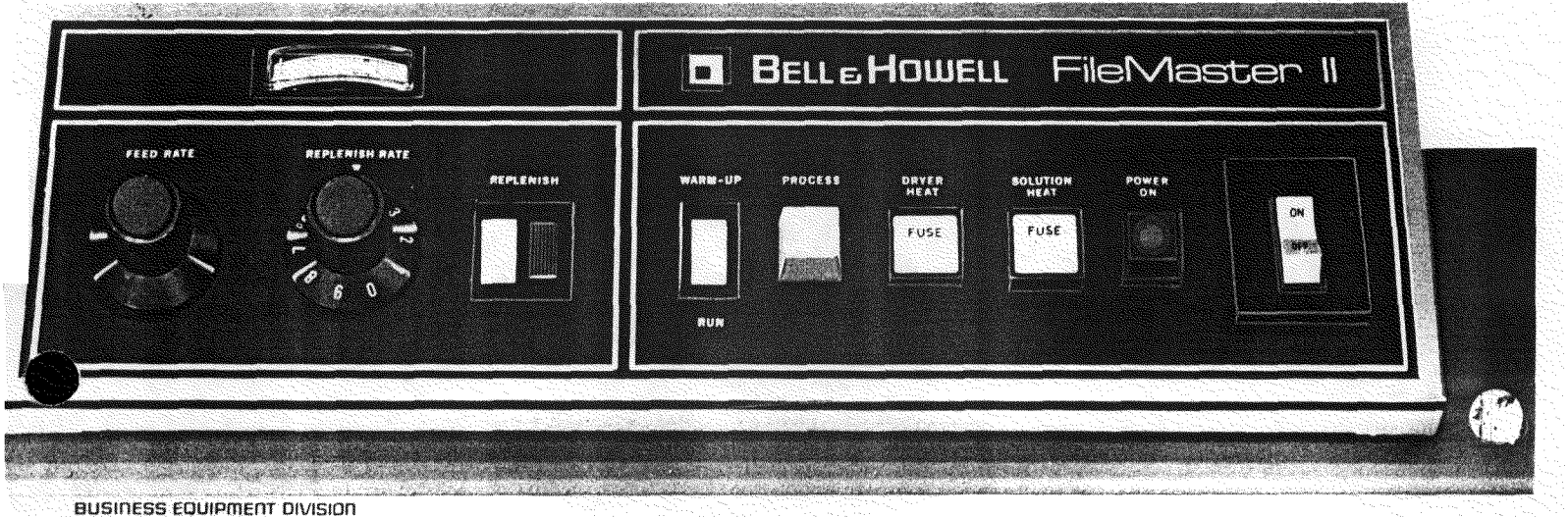
Warm Up Time:
20 to 25 minutes.

Electrical Requirement:
110VAC, 50-60Hz, 20AMP or 220VAC, 50-60Hz, 10AMP

Dimensions:
Height — 17″ (43cm)
Width — 20″ (51cm)
Length — 67″ (170cm)

Weight:
150 lbs. (67.5kg.)

Accessories:
Mixing Valve
Load Boxes for 16-105mm films
Automatic solution replenishment system with 2.5 gallon (9.5L) reserve capacity.
Scrubber rack for dye back removal.
Console for desk level usage.



BUSINESS EQUIPMENT DIVISION
45 Jutland Road, Toronto, Ontario M8Z 2G8 (416) 259-4641
BELL & HOWELL
CANADA LTD.

Canon
MICROGRAPHICS

CANON AUTOPROCESSOR 165

Canon Autoprocessor 165 is a compact, desktop unit for automatic two-bath processing of full rolls of standard 16 mm microfilm. It is ideally suited to processing films exposed by Canon rotary and planetary filmers.

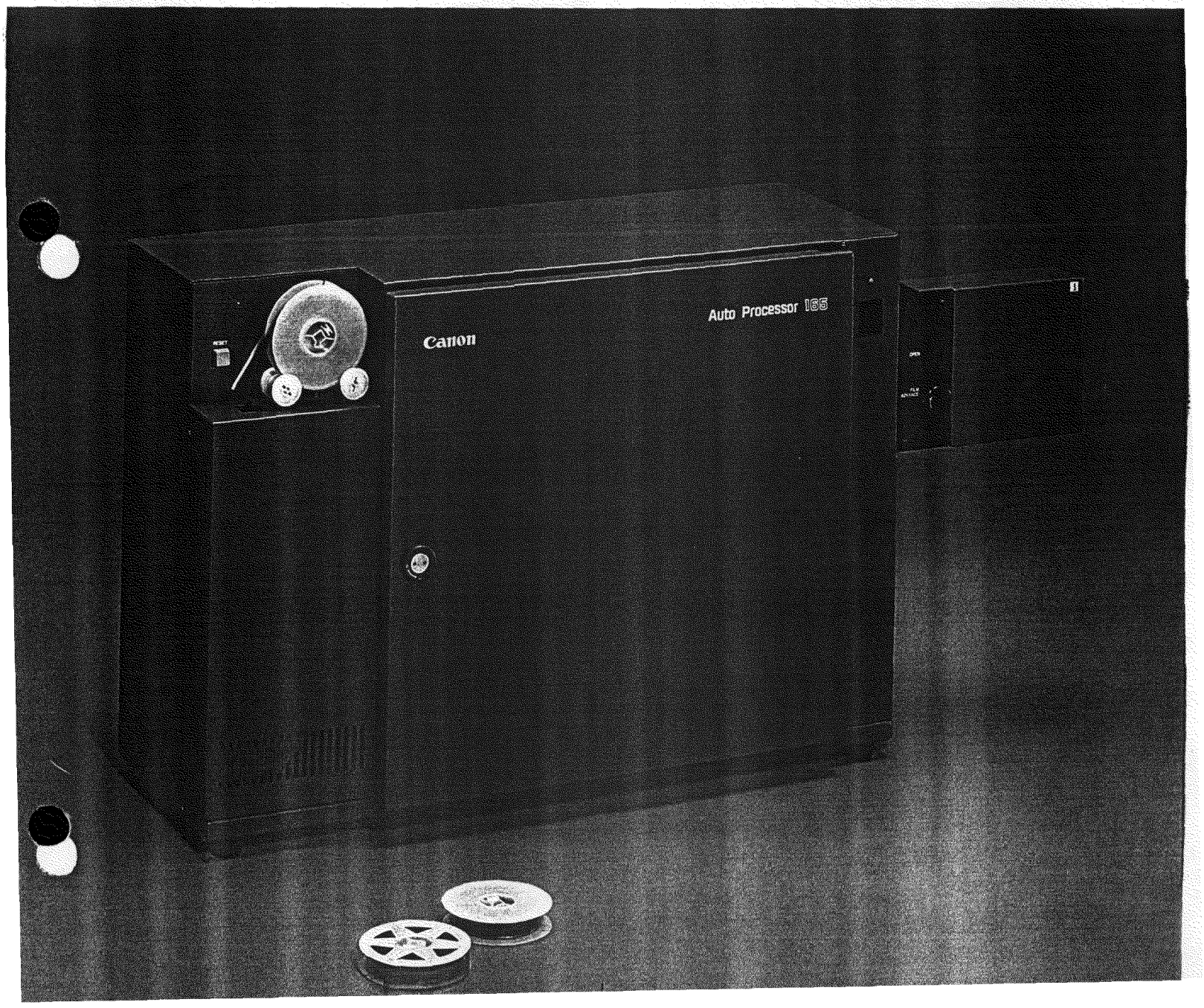
Easy Installation—No plumbing is required to install Autoprocessor 165. The unit is noise-free in operation and can be placed anywhere in the office, simply just as close as the nearest power outlet.

Simple, Leaderless Operation—First load exposed film wound on a standard reel or in Takeup Magazine 100 into the processor's detachable supply unit, attach supply unit to main unit, then feed film's leading end into processing chamber by rotating the knob. The film is then automatically threaded into the processing chamber where it is developed, fixed, washed, dried, then delivered to the takeup reel.

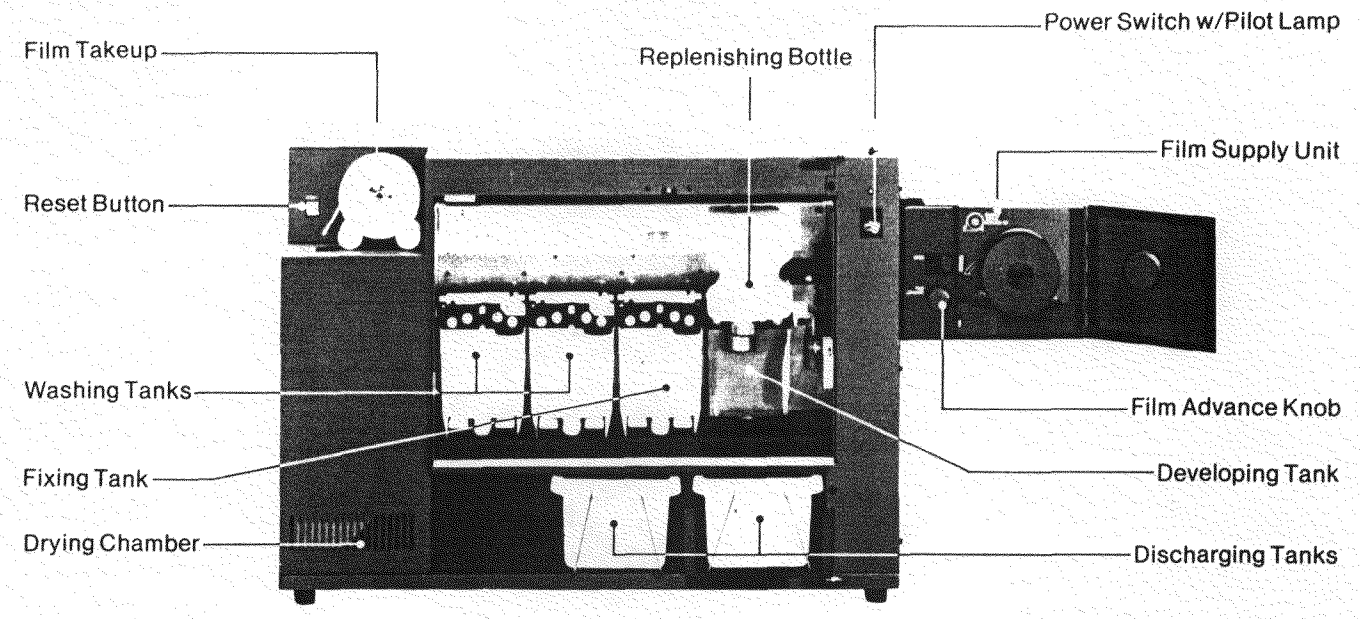
Lab Standard Results—Canon Duomicrol 80 (liquid type) or 82 (powder type) solutions always assure excellent contrast, archival-quality images which fully meet international standards for archival storage.

No Operation Adjustments Required—All operating functions are automatically controlled for greater reliability and accuracy. Both visual and audible signals indicate to the operator, operation steps necessary only for initial film loading and film takeup.

Easy Maintenance—Routine maintenance is minimal, merely involving periodic cleaning of processing chamber, and replacement of solutions and rinse water.

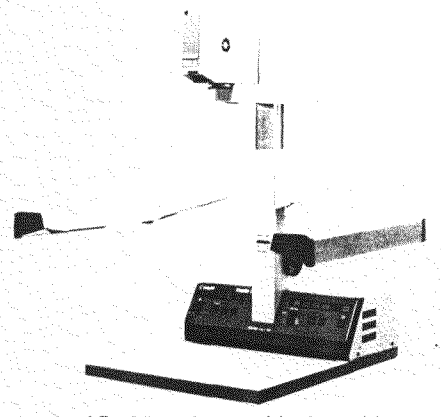


CANON AUTOPROCESSOR 165



Canon Autoprocessor 165 Features:

- **No Plumbing Required**
- **Leaderless Automatic Processing**
- **Professional Lab Standard Processing**
- **Proven Reliability**
- **Consistent High Quality**



AP165 makes an ideal combination with any Canon 16mm microfilmer.

Duomicrol 80 (liquid type) and Duomicrol 82 (powder type)

Specifications of Canon Autoprocessor 165

Type:	Self-threading desktop processor
Film Supply:	0.3~30.5 m (1~100 ft) of 16 mm microfilm on standard reels or in Takeup Magazine 100 * Canon CL and films of other brands specified by Canon
Film Takeup:	Standard reel
Processing Speed:	1.2 m/min (30 minutes per 30.5 m film)
Processing Temperature:	32°C (89.6°F) fixed
Processing Materials:	Canon Duomicrol 80 (liquid) or 82 (powder) Each 400 ml solution tank for developing and fixing (To be replaced weekly or after processing one 30.5 m film)
Warmup Time:	5 minutes max.
Washing:	Two 400 ml tanks of stored water (To be replaced weekly or after processing one 30.5 m film)
Drying:	Warm air impingement
Electrical Requirements:	120 V 60 Hz, 220 V 50 Hz, or 240 V 50 Hz; 450 W max.
Dimensions (H × W × D):	513 × 920* × 265 mm *w/Film Supply Unit (20-3/16" × 36-1/4" × 10-7/16") Film Supply Unit: 150 × 210 × 500 mm (6" × 8-1/4" × 19-11/16")
Weight:	30 kg (66.1 lb)
Operation Environment:	15~30°C (59~86°F), 20~85% R.H.

These specifications may be modified without prior notice.

Canon

CANON INC.
7-1 NISHI-SHINJUKU 2-CHOME, SHINJUKU-KU, TOKYO 160, JAPAN

CANON EUROPA N.V.
VAN LEIJENBERGHLAAN 221, 1008 AC AMSTERDAM, THE NETHERLANDS

CANON U.S.A. INC.
ONE CANON PLAZA, LAKE SUCCESS, N.Y. 11042

CANON CANADA INC.
3245 AMERICAN DRIVE, MISSISSAUGA, ONTARIO L4V 1N4, CANADA

CANON LATIN AMERICA, INC.
APARTADO 7022, PANAMA 5, REP. OF PANAMA

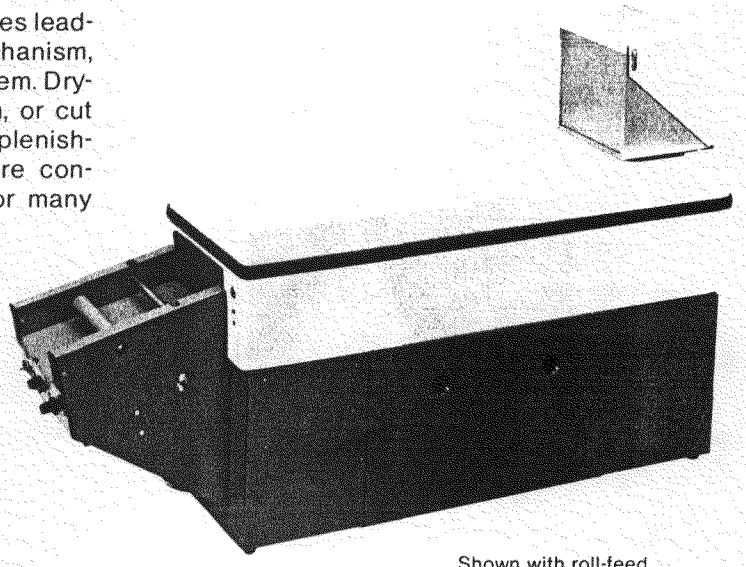
CANON AUSTRALIA PTY. LTD.
1/37 WATERLOO ROAD, NORTH RYDE, SYDNEY N.S.W. 2113, AUSTRALIA

Microfilm Processor Model 8102

extek

Archival Quality, Easy To Use 16-105 mm Processor

Extek's Model 8102 deep-tank processor features leaderless self threading, a convenient take-up mechanism, and a built-in, fully automatic replenishment system. Dry-to-dry processing of 16-105 mm silver roll film, or cut fiche, is accomplished at speeds up to 3 fpm. Replenishment reservoirs are within the cabinet and are conveniently accessible. Adaptors are available for many different camera magazines.



Shown with roll-feed magazine in place.

SPECIFICATIONS

Films Accommodated:

Any width 16 mm through 105 mm.
Thickness 2.5 to 8 mils.

Wet process silver halide films; originals (camera film) or duplicates (print film or direct duplicating film). Not suitable for dye-backed films.

Processing Speed:

Operator adjustable up to 3 ft per min (914 mm per min) up to 3 rolls of 16 mm or 35 mm film may be processed at the same time.

Solution Capacity:

Developer	Fixer	Replenishers
1 U.S. gal (3.8 l)	1 U.S. gal (3.8 l)	1 U.S. gal (3.8 l) each

Developer and fixer are continuously agitated.

Water Requirements:

0.25 U.S. gal per min (0.9 l per min) at 80° to 85°F (27° to 29°C).

Electrical:

Model	AC Input (single phase)	Current
8102	115 volts, 60 Hz	5 amp
8102E	230 volts, 50 Hz	2.5 amp

Dimensions:

	Height	Width	Length
Base	—	11.5 in (292 mm)	33.6 in (853 mm)
Overall	28.3 in (719 mm)*	12.5 in (318 mm)	45.5 in (1156 mm)

*19.8 in (502 mm) without roll-feed magazine in place.

Weight:

Model	Unit Wt.	Approx. Shipping Wt.
8102 or 8102E	110 lbs (50 kg)	145 lbs (66 kg)

ACCESSORIES

Supplied with Processor:

Roll-feed magazine.
Inlet and drain hoses.
Interconnecting hoses and fittings.

Optional:

Adapters for various camera magazines.
Water mixing valve.
Water filter and replacement filter cartridges.
Spare parts kit.

Specifications subject to change without notice.

extek

Extek Microsystems, Inc.
6955 Hayvenhurst Avenue
Van Nuys, California 91406
Telephone: (818) 989-2630
Telex: 651465

KODAK PROSTAR I & II

Processors for Microfilm

- Table-top processing of microfilm
- Self-threading, roomlight-operating, clean, and quiet
- Low maintenance

Kodak

KODAK PROSTAR I & II

Kodak microfilm processors: speed, convenience, and productivity in your office environment.

KODAK PROSTAR I and II Processors are designed for roomlight operation. They are self-threading, quiet, compact, table-top units requiring minimal operator training and maintenance. They allow for conventional processing.

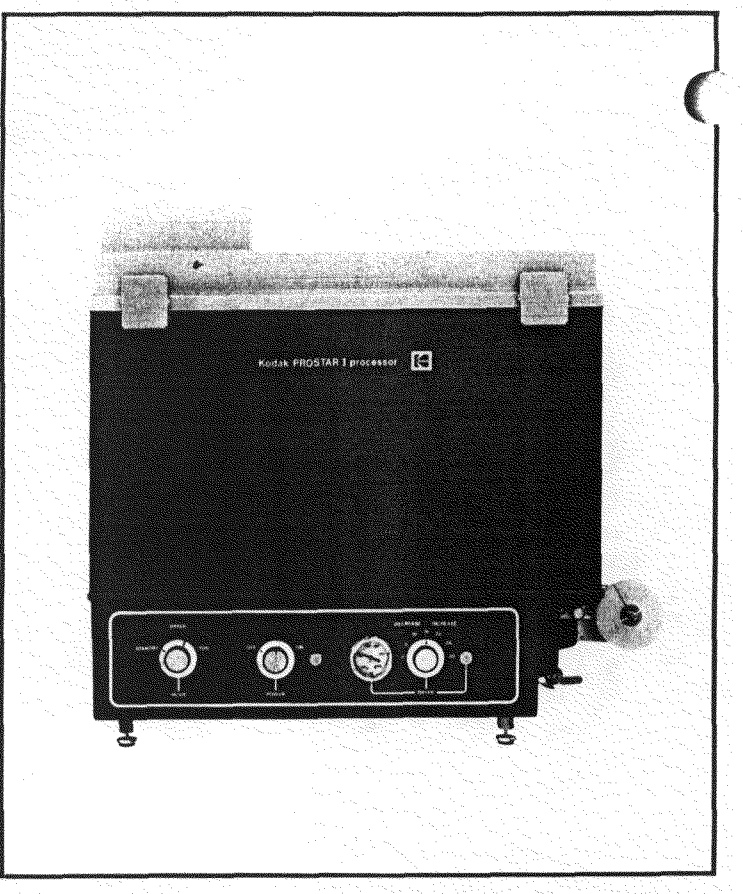
Because they can operate in an office environment, these processors provide security for your private records and confidential information.

The KODAK PROSTAR I Processor handles short-run lengths of microfilm or rolls up to 215 feet.

The KODAK PROSTAR II Processor is specifically designed for long-run capability with the flexibility to adapt to various cassettes, magazines, and cartridges utilized in the microfilm industry.

Both models incorporate an improved control to minimize temperature fluctuation; a capacitor-synchronous motor that is virtually immune to voltage drops; and improved developing, washing, and drying characteristics. They have been made rugged for long life and reliability.

Remember: Kodak will also monitor and analyze the quality on your output to help optimize your processing needs. Ask your Kodak representative for more information.



KODAK PROSTAR I Processor

Our new standard microfilm processor for 16 and 35 mm lengths up to 215 feet. Speed, reliability, and security with installation on your premises.

The KODAK PROSTAR I Processor offers convenient, short-length microfilm processing. Processes 10 feet (3 metres) per minute.

16 mm and 35 mm Film: Variable lengths of both film widths processed interchangeably without adjustments—accepts lengths as short as two feet. Accepts 100-foot (30.5-metre) rolls of 5-mil acetate and ESTAR Base films, 125 feet (38 metres) of 4-mil ESTAR Base film, and 215 feet (65.5 metres) of 2½-mil ESTAR Thin-Base Film.

Roomlight Loading: Permits the processor to be used virtually anywhere under normal roomlight conditions.

Automatic Threading: Simply insert the self-threader, attached to the film, into the drive rollers. In less than 60 seconds, dry, processed film is spooled onto the take-up reel.

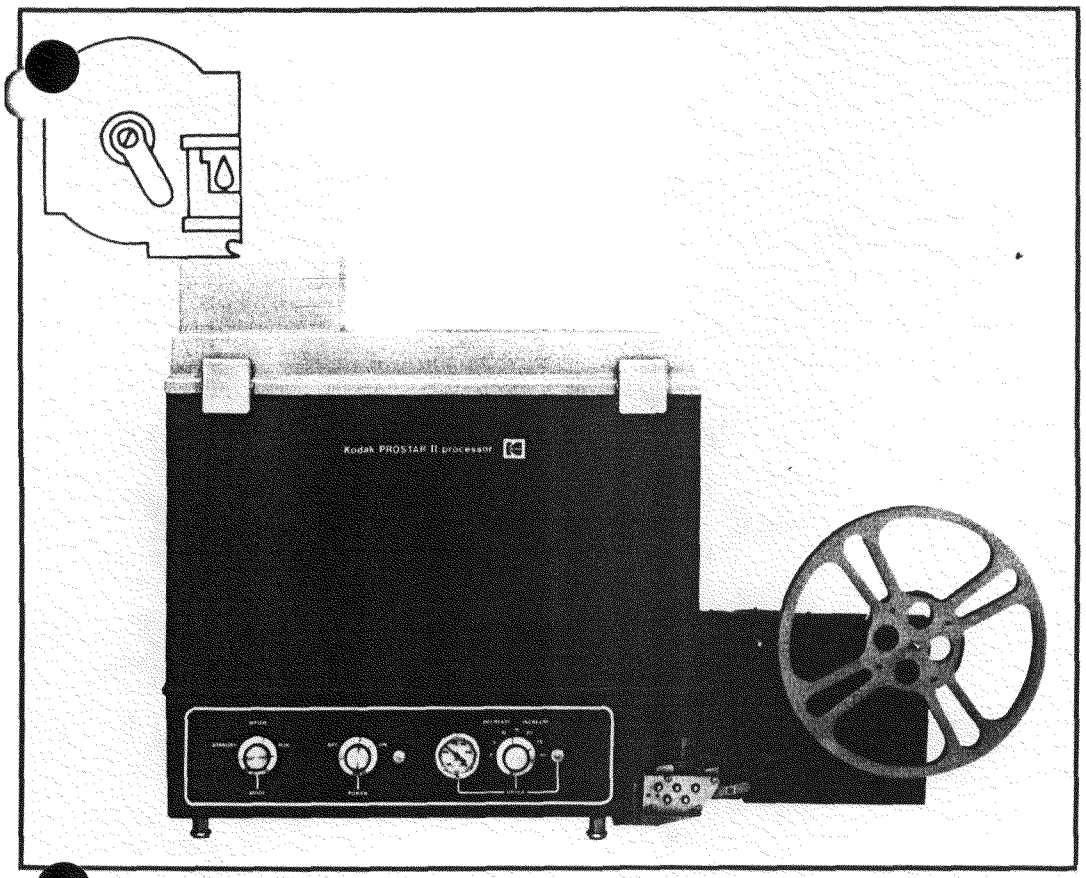
Archival Quality: Processing meets the requirements of all applicable ANSI standards.

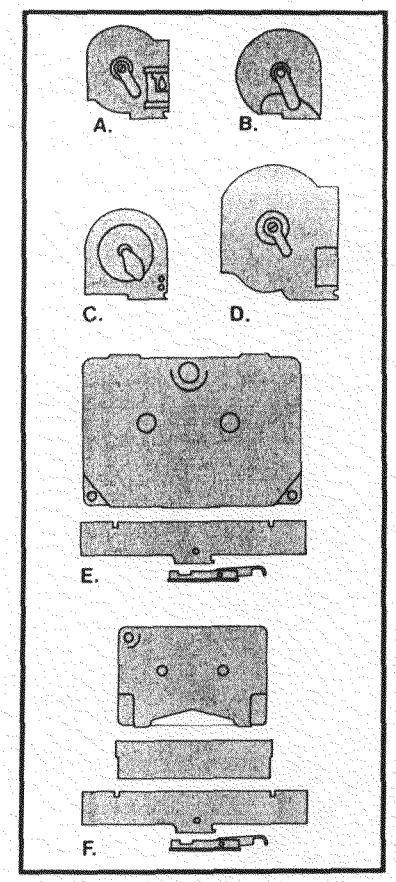
Premixed Chemicals: KODAK PROSTAR Chemicals are ready to use and available for conventional processing in disposable, gallon-size, plastic containers.

Rem-Jet and AHU Films: An improved #3 rack, normally used with rem-jet films, need not be changed when using non-rem-jet films. Simply disconnect water hose.

Silver Recovery: Discuss this with your Kodak photographic specialist if you require further information.

Accessories Include: KODAK PROSTAR Chemical Replenisher Kit, KODAK Thermostatic Mixing Valve, KODAK Processed Microfilm Inspection Kit, KODAK Processor Cabinet, KODAK PROSTAR Cabinet Sink.





KODAK PROSTAR II Processor

Incorporating all the advantages of the PROSTAR I Processor with long-length-processing capability built in—to 2400 feet. Adapts to a wide range of magazines, cartridges, and cassettes.

The KODAK PROSTAR II Processor offers 16 mm long-length processing. Also accepts standard lengths of 35 mm. Normally processes 10 feet (3 metres) per minute. Dual-strand 16 mm capability doubles the output of 16 mm to 20 feet (6 metres) per minute.

The KODAK PROSTAR II Processor has all the design features of the KODAK PROSTAR I Processor plus:

Long-Length Processing: Accepts single rolls up to 1200 feet (366 metres) of 5-mil film and up to 2400 feet (732 metres) of 16 mm, 2½-mil film from external magazines and cassettes. Automatic replenishment is mandatory when processing long lengths, to achieve optimum quality.

Dual-strand Processing: Two rolls of 16 mm film can be processed simultaneously, effectively increasing processing speed to 20 feet (6 metres) of film per minute. Automatic replenishment is highly recommended during this procedure.

Driven Take-Out Rack: Positive film drive provides greater ease while attaching film to take-up reel.

Cassettes and Magazines: A Vought adapter plate and a supply chute allows roomlight operation with various magazines, cartridges, and cassettes.

Accessories Include: KODAK PROSTAR Chemical Replenisher Kit, KODAK Thermostatic Mixing Valve, KODAK Processed Microfilm Inspection Kit, KODAK Processor Cabinet, KODAK PROSTAR Cabinet Sink, KODAK PROSTAR Cassette Adapter.

KODAK PROSTAR II Processor utilizes magazine, cartridge, and cassette configurations (shown here with adapters):

A. 16 mm Vought camera magazine, 400 ft/600 ft (reloadable)

B. KODAK KOM Film Magazine, Model 600A (reloadable)

C. Pacific Optical 16 mm camera magazine (reloadable)

D. 16 mm Vought camera magazine, 1000 ft (reloadable)

E. IBM microfilm cassette (reloadable)

F. KODAK SCANNER-Pack B Cartridge (disposable) or TDC SRM 1800 SCANNERMATE Cassette (reloadable) used with BURROUGHS 9137, CUMMINS-ALLISON 6400 and 4200, NCR 6780 and HONEYWELL Reader-Sorters and SCAN OPTIC 500 OCR Data Entry System.

Available Films:

KODAK PROSTAR I and II Processors will handle most silver-halide microfilms and print films. Discuss your film needs with your Kodak representative.

KODAK PROSTAR I and II
Processors for Microfilm

Specifications

KODAK PROSTAR I Processor

Speed. Ten feet (3 metres) per minute is standard speed.

Films: A wide variety of RECORDAK Films can be processed—most to archival ANSI standards.

Chemicals: Processor's capacity is 44 fluidounces (1.3 litres) each of developer and fixer, sufficient to process approximately 2000 feet (610 metres) of 16 mm film or 1000 feet (305 metres) of 35 mm film. With replenishment, approximately 8000 feet (1828 metres) of 16 mm film and 4000 feet (914 metres) of 35 mm film can be processed. Ready-to-use PROSTAR Developer and Fixer supplied in disposable one-gallon (3.8 litres) plastic containers.

Water Requirements: Water must be supplied from a thermostatic mixing valve at 96°F ± 2 (34.5 to 36.5°C). Flow rate is ½ gallon (1.9 litres) per minute for clear- or gray-base films, and 1½ gallons (5.7 litres) per minute for films with rem-jet backing. A drain with a capacity of at least 6 gpm (22.7 litres) must be located below the processor outlet. The installation kit includes hoses for attachment to the water supply and drain.

Electrical Requirements: 104 to 127 volts, 60 Hz, or 113 to 127 volts, 50 Hz, single-phase, ac, 12A. Underwriters' Laboratories, Inc. Listed, CSA-approved.

Environmental Requirements: Normal office environment where temperature is 65 to 86°F (18.5 to 30°C) and relative humidity is 20 to 76%. Processor generates approximately 4800 BTUs per hour (1410 watts) when in "dryer" or "run" mode.

Color: Dark brown with light tan cover.

Dimensions: Height—29" (73.7 cm) top cover closed; 36" (91.4 cm) cover open. Depth—16" (40.6 cm) top cover closed; 22" (56 cm) cover open. Length—30" (76 cm). Weight—100 lbs (45.4 kg) empty; approximately 125 lbs (56.7 kg) with chemicals, racks, and water.

KODAK PROSTAR II Processor

Specifications of PROSTAR II Processor are the same as PROSTAR I Processor, with these additions. Processor adapts to these magazines, cartridges, and cassettes: 16 mm Vought camera magazine, 400 ft/600 ft (reloadable), Pacific Optical 16 mm camera magazine (reloadable), 16 mm Vought camera magazine, 1000 ft (reloadable), IBM microfilm cassette (reloadable), KODAK SCANNER-PACK B Cartridge (disposable), or TDC SRM 1800 SCANNERMATE Cassette (reloadable).

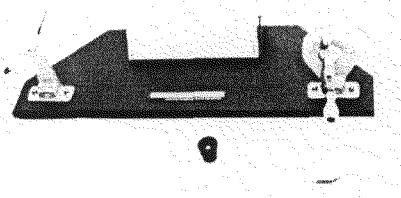
Dimensions: Height—31" (78.7 cm) cover closed; 36" (91.4 cm) cover open. Length—39" (99.1 cm). Depth—16" (40.6 cm) cover closed; 24" (61 cm) cover open. Weight—approximately 115 lbs (52.2 kg) empty, 140 lbs (63.5 kg) with chemicals, racks, and water.

Accessories for KODAK PROSTAR I and II Processors

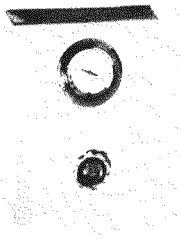
KODAK PROSTAR Chemical Replenisher Kit, KODAK Thermostatic Mixing Valve, KODAK Processed Microfilm Inspection Kit, KODAK Processor Cabinet, KODAK PROSTAR Cabinet Sink, KODAK PROSTAR Cassette Adapter (PROSTAR II Processor only).

Processing Aids for KODAK PROSTAR I and II Processors

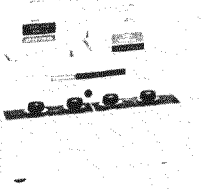
KODAK PROSTAR 16 mm Self-Threader; KODAK PROSTAR 35 mm Self-Threader; KODAK PROSTAR 16 mm Dual-Strand Self-Threader (PROSTAR II Processor only); KODAK PROSTAR Tape and Dispenser; RECORDAK DACOMATIC E or AHU Control Strips.



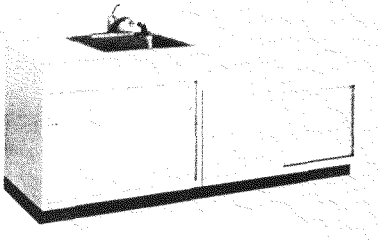
KODAK Processed Microfilm Inspection Kit



KODAK Thermostatic Mixing Valve



KODAK PROSTAR Chemical Replenisher Kit



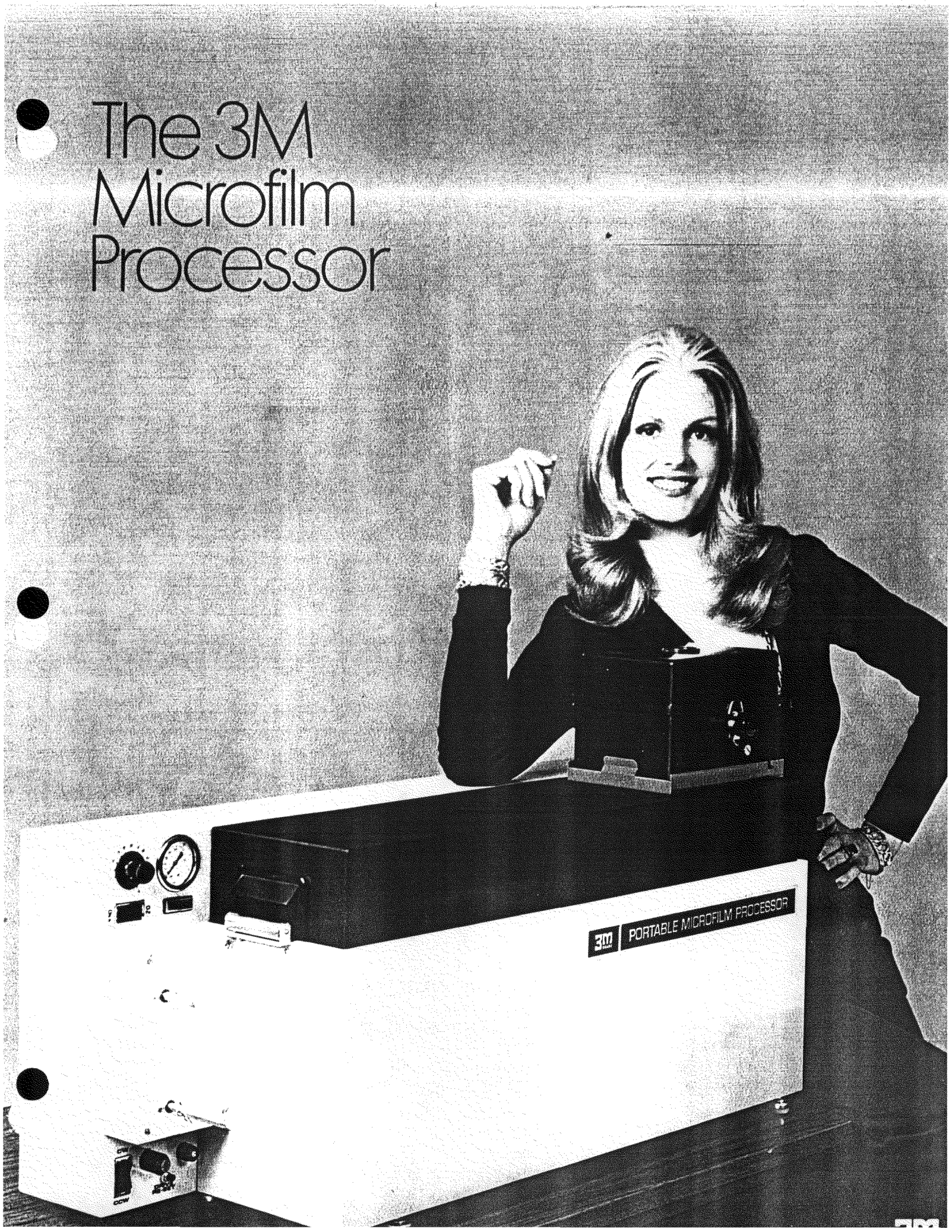
KODAK PROSTAR Cabinet Sink, KODAK Processor Cabinet

EASTMAN KODAK COMPANY
Business Systems Markets Division
Rochester, N.Y. 14650
Kodak Canada Inc./Business Systems Markets Division/Toronto, Ontario

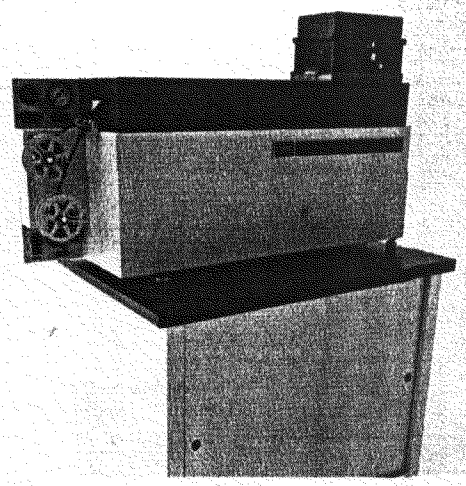
Kodak, Recordak, AHU, Dacomatic, Estar, KOM, Scanner-Pack,

Printed in U.S.A. 7/80

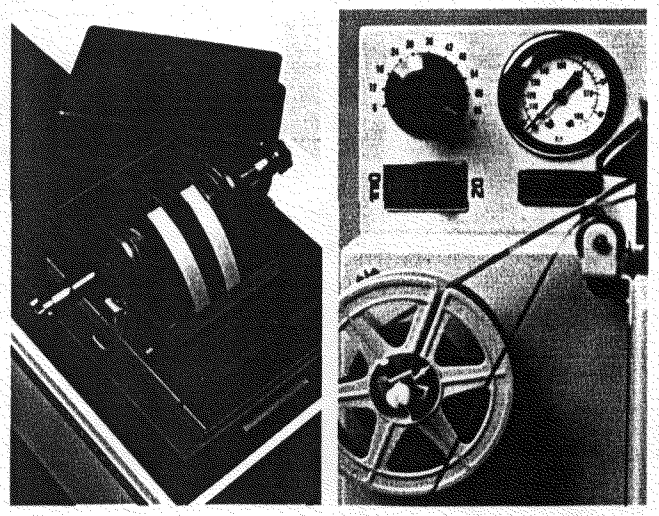
The 3M Microfilm Processor



The 3M Microfilm Processor



Process your own microfilm. The self-threading 3M Portable Microfilm Processor accepts film lengths from 6 inches to 215 feet. Now there's a new space-saving way to process 16mm and 35mm microfilm . . . carbon-back or noncarbon-back. Daylight operation means no darkroom needed. The "anywhere" processor sits on table, stand or workbench . . . or can be wall mounted to save space. Cabinet shown also available from your 3M dealer.



The 3M Processor was made for "in-house" processing, with simple self-threading operation. Just attach short leader strips to microfilm. Produces film that meets ANSI archival specifications.

Simple operation, simple maintenance makes simple processing. The 3M Microfilm Processor gives you finger-tip control.

Specifications:

Film Magazine	Light tight magazine, removable for film loading.
Film Threading	Self-threading; attach leader to film.
Film Sizes	Any 16mm single or double strand, 35mm single strand.
Film Types	Any dyeback or non dyeback film, 2.5 mil to 5.4 mil, tri-acetate or polyester base.
Adjustable Speed	0-6 FPM; 12 FPM throughput when using dual strand 16mm film.
Processing Time	75 seconds dry-to-dry time at 6 feet/minute.
Film Take-up	CW or CCW, to wind emulsion in or out.
Film Transport	All one unit for faster set-up time, cleaning and reliability.
Slip-clutch	Provides safety factor for the film transport.
Dimensions	40" wide, 14" deep, 15" high.
Construction	Attractive metal casing, all tanks stainless steel.
Chemicals	Supplied pre-mixed in gallon bottles; no mixing needed.
Weight	70 lbs.
Electrical Requirements	110 volts, 60 cycles, 4 amps.

Photographic Products Division 3M COMPANY
3M CENTER · ST. PAUL, MINNESOTA 55101

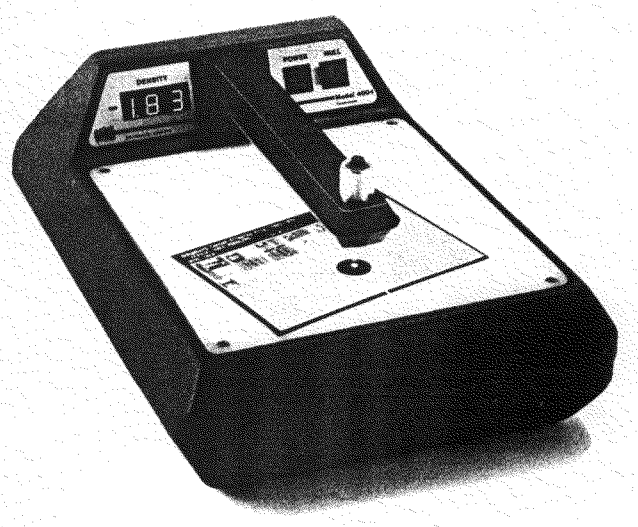
Model 4004 Digital Densitometer

extek

An automatically controlled Digital Densitometer with electronic memory for absolute and difference measuring of silver microfilm densities

Versatile and Simple To Use

The Extek 4004 Densitometer is a 3rd-generation instrument with completely automatic controls, including electronic memory for automatic nulling and density comparison measurements. These features enable you to make accurate and repeatable measurements from density 0 to 5.00. Readings are made simply by pressing a button on the densitometer arm. When the button is released, a digital readout automatically holds the displayed value.



Unique Features

The Model 4004 has push-button zeroing. This feature allows you to compute density by comparisons against a standard, from point-to-point on the same film, or from point-to-point on different films. An illuminated inspection table is incorporated to allow visual examination of areas of interest.

General Features

Null (Zero) - Remains stable with line variations from 100 to 130 VAC.

Scale Factor - Factory calibrated to National Bureau of Standards step wedge. Scale factor stability of ± 1.0%.

Lighted Table - For ease in finding areas of interest to measure, or visual inspection of film.

Rugged - Designed to remain aligned, even if picked up by the reading arm.

Service - Modular construction allows rapid replacement of electronics and lamps.

Displays - Large, half-inch L.E.D. numeric display for ease of reading.

Warm Up - Instantaneous.

Electronics - Voltage and temperature compensated; includes factory burn in.

Density Comparison - Null on reference standard and compare density readings.

Density Subtraction - Excellent features for processor control; subtract high-low readings with the push of the button to give range.

Included as standard items are a spare lamp, 5-step calibration tablet, and operating manual. Service is available from your local Dealer/Representative, or direct from our factory.

Specifications

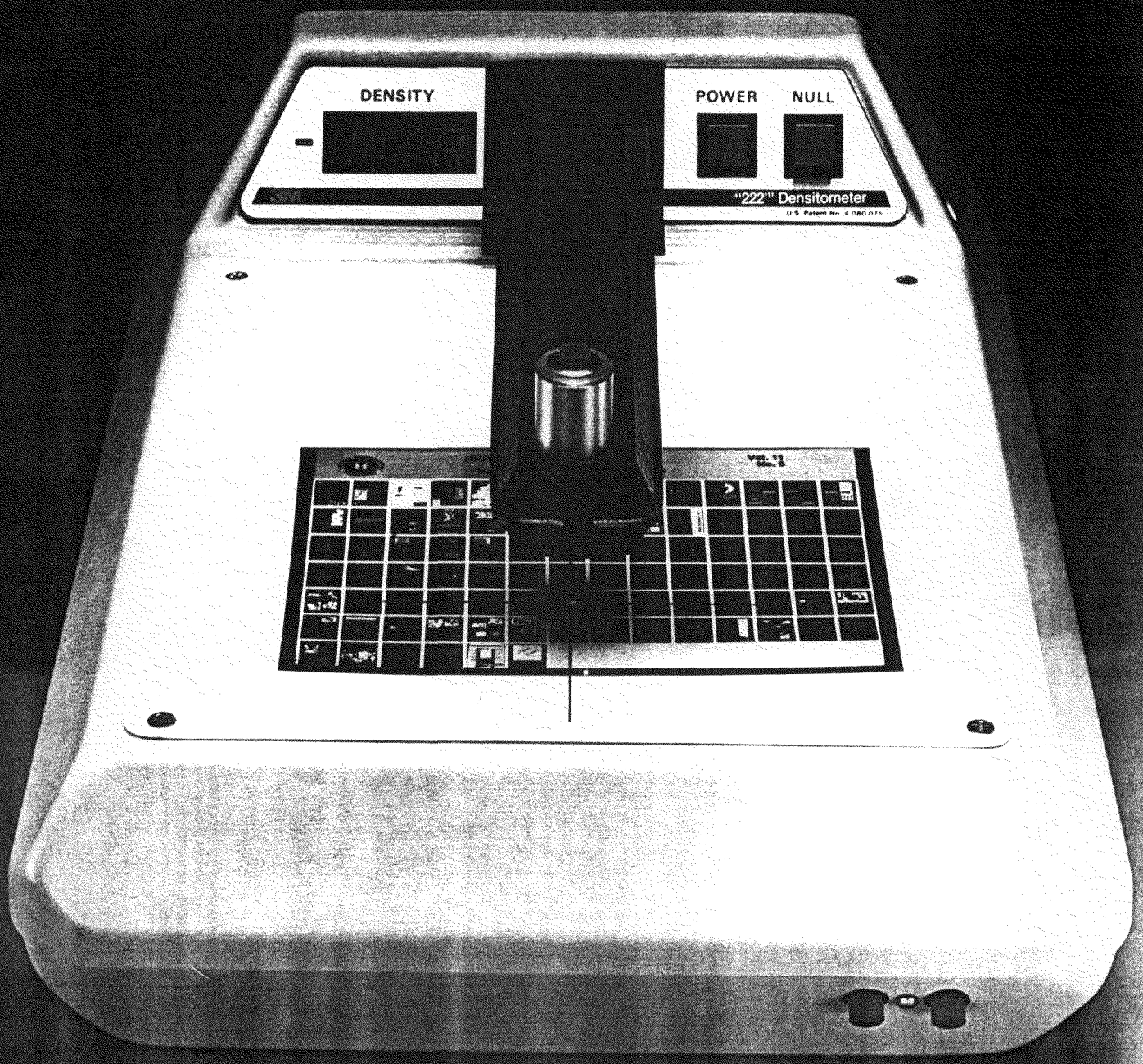
Density Range	0 to 5.00 D with 2mm and 3mm apertures 0 to 4.00 D with 1mm and 0.5mm apertures
Accuracy	± .02 D (± 10 °C to + 40 °C)
Repeatability	± .01 D
Apertures	1mm, 2mm, and 3mm (interchangeable), included; 0.5mm, optional
Power	115V, 60Hz standard 230V, 50Hz optional
Net Weight	8.5 Lbs. (3.9 kg)
Dimensions	Height 5 in. (13 cm) Width 10 in. (25 cm) Depth 15 in. (38 cm)
Calibration Standard	ANSI calibrated 5-step tablet traceable to National Bureau of Standards

extek

Extek Microsystems, Inc.
6955 Hayvenhurst Avenue
Van Nuys, California 91406
Telephone: (213) 989-2630
Telex: 651465

222 Densitometer

3M



Get high quality images from your microfilm system every time... with 3M's Model 222 Densitometer.

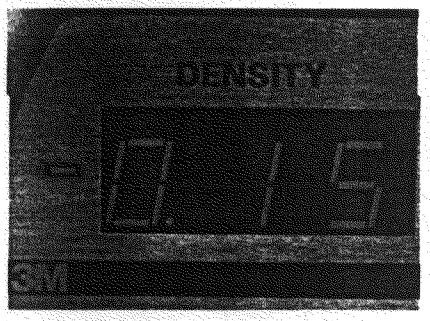
The final product your microfilm system produces is only as good as the quality control you put in. That's why you need the 3M "222" Densitometer.

This solid state, precision instrument detects density variations so subtle they can't be seen by the naked eye. So you get the readability of quality microfilm images time after time. Readability that can meet all density specifications for N.B.S., I.R.S., N.M.A., D.O.D., etc.

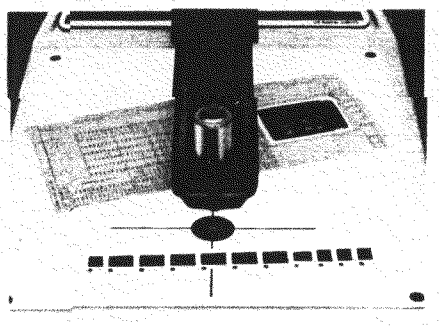
Fully electronic, the 3M "222" Densitometer reads with the push of a button. Interchangeable apertures allow accurate readings on all formats at all reductions.

Push-button zeroing and a built-in memory permit rapid reading of multiple image formats and repeatable density comparisons. Voltage and temperature compensated electronics give you consistent, accurate readings.

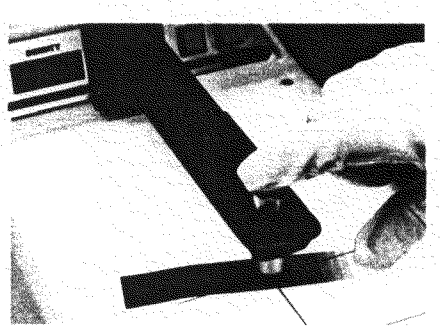
Modular construction makes service quick and easy. And the "222" Densitometer is so rugged, it will remain aligned even if picked up by the reading arm.



Easy to read display, built-in memory. Large LED numerals make density display easy to see, even in brightly lit areas. Convenient memory function allows operator to store reference density values for rapid comparisons. Excellent for processor control applications.

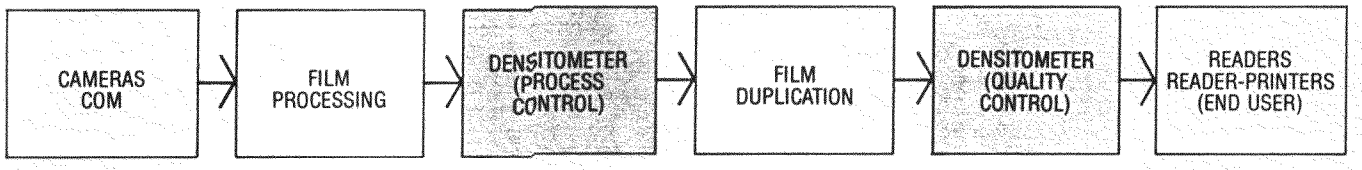


Lighted work surface. Locating image areas to be measured is easy on the lighted work surface. It also can be used for film inspection.



Simple calibration. Comes factory calibrated to national standards. Light source is a tungsten halogen lamp that's optically pre-aligned and easily replaced. A density step wedge is provided for simple operator calibration to specific densities.

The 3M "222" Densitometer is vital to assuring quality control in your microfilm system.



Typical Machine Characteristics

Measuring Range:
0-5.0 (2mm aperture)

Accuracy: ± .02

Repeatability: ± .01

Zero Stability per 8 hours:
± .03 (.01 Typical)

Scale Factor (Slope) Stability:
± 1%

Display:
½ inch LED

Optics:
Designed to conform to ANSI PH 2.19, diffuse transmission density standard for silver gelatin films.

Light Source:
Tungsten halogen lamp, pre-aligned

Sensors:
Photovoltaic silicon diodes

Warm-up time:
less than 60 seconds

Measuring Area:
1mm, 2mm, 3mm apertures included (.5mm optional)

Power Requirement:
80 VA, 50 Hz-60Hz, 115/230V AC ± 10% (compensated)

Operating Temperature Range:
10°—40°C (compensated)

Dimensions:
10¼"W x 15"D x 5¼"H (26cm x 38.1cm x 13.3cm)

Weight:
8.5 lbs. (3.86 kg)

Measuring Arm Length:
7⅜" (18.7 cm)

Warranty:
One year limited (bulb excluded)

NOTE: The 3M 222 will provide accurate density measurements from all silver and diazo films. For vesicular, ultra violet or color densities, the 3M Model 232 multi-use densitometer is recommended.

Consult your 3M Sales Representative for more information.

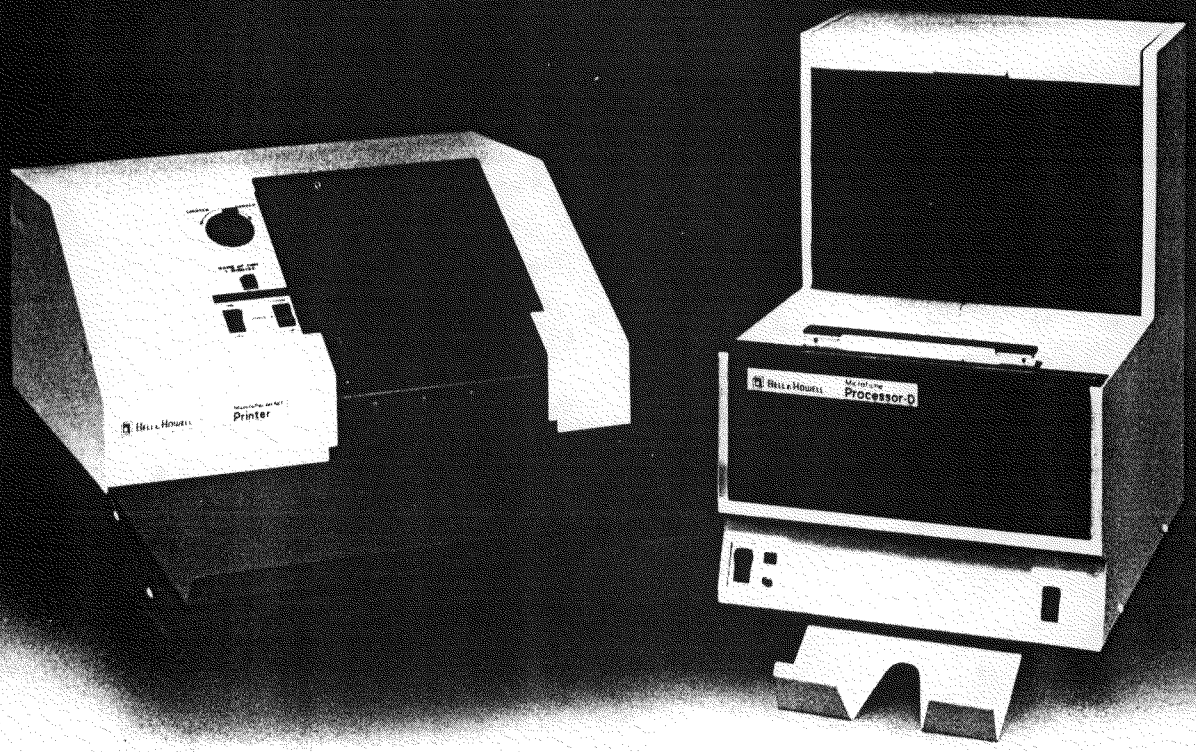
78-1757-9560-4 (621) BE

Litho in U.S.A.

Micrographic Products Division/3M
220-9E 3M Center
St. Paul, Minnesota 55144

3M

Microfilm Printer/Processor



Makes Low-Cost Microfiche and Jacket Diazo Duplicates

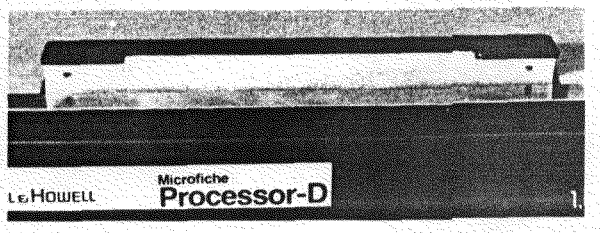
Here is your key to complete file control where the original never leaves the file area and only diazo duplicates are distributed – therefore the entire film file is always available to everyone needing it.

Simple to operate, convenient and fast, the Bell & Howell Printer/Processor units can make quality duplicates right in your office at a speed up to 500 an hour. And, no venting is required; just regular electrical connections.

Distributing low-cost duplicates of an entire file maintains the file control you need to protect filmed information and have it always available for viewing and printmaking.

BELL & HOWELL

Microfilm Printer/Processor



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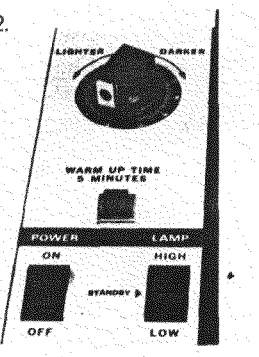
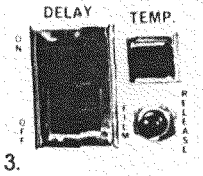




3.

Features

1. Processing Chamber
Accommodates all three popular sizes of film. Processes two sheets simultaneously. Cycle time is continuously adjustable from 9 to 19 seconds to allow for a wide range of film speeds.

2. Convenience-Grouped Controls on Printer Unit
Provides easy operator accessibility, assures optimum productivity.

3. Sheet Dropout Delay
Featured on the processor permits handling a variety of film thicknesses and conditions. Temperature indicator light and manual chamber release button are also provided.

Specifications

Printer

Film Sizes:
Up to 8 x 5 (203.2mm x 127 mm)

Optical System:
Precision 400 watt metal halide QVC, special NB Jackets UV system—air cooled rotating exposure cylinder.

Speed:
Automatic and continuous Rotary Printing—exposes over 500 diazo or vesicular sheets per hour.

Controls:
Variable exposure control; power on/off switch; three position lamp level control: High—normal operation, Low—production operation, Stand by—for on demand operation.

Size:
21" wide, 23" deep, 16" high (53.4cm x 58.4cm x 40.6cm)

Weight:
90 lbs. (40.82 kg)

Power:
110-115 volts, 60 cycles, 6 amp A.C.

Processor

Models Available:
1) 3 x 5 (76.2mm x 127mm)
2) 4-1/16 x 6 (103.2mm x 152.4mm) and/or 4-1/8 x 5-13/16 (105mm x 148mm)
3) 3-5/8 x 7-3/8 (92mm x 187.3mm) and/or 4-1/16 x 6 (103.2mm x 152.4mm)

Capacity:
Two sheets may be processed simultaneously, cycle time—9 to 19 seconds, adjustable to allow the use of various speeds of Bell & Howell diazo/vesicular film.

Size:
14-5/8" wide, 19" deep, 21" high (37.1cm x 48.3cm x 53.4cm)

Weight:
75 lbs. (34.02 kg)

Power:
110-115 volts, 60 cycles, 6 amp A.C.

BUSINESS EQUIPMENT DIVISION
45 Jutland Road, Toronto, Ontario M8Z 2G8 (416) 259-4641

BELL & HOWELL

CANADA LTD.

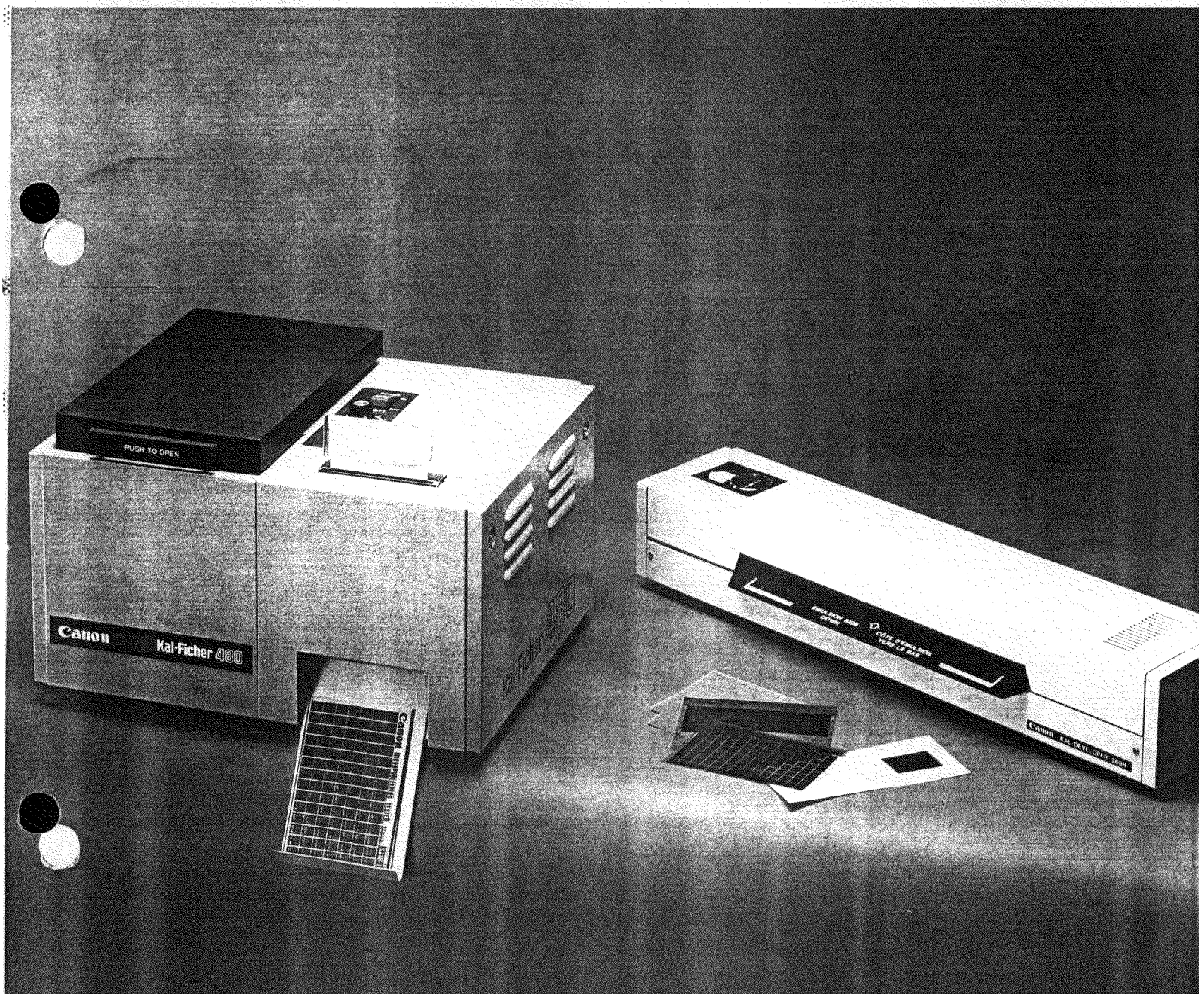
Canon
MICROGRAPHICS

CANON
KAL-FICHER 480/KAL-DEVELOPER 360H

Canon Kal-Ficher 480, a simple desktop card-to-card duplication unit, is designed for convenient instant use and is an ideal addition to the Canon SOM system.

Combining both exposure and developing processes in a single unit, Canon Kal-Ficher 480 quickly reproduces high-quality images on diazo film from standard (105mm×148mm) or super (105mm×187mm) fiche/jackets or aperture cards. In use, simply locate a master film in contact with the diazo duplicating film on the scratch-free glass flat platen and close the pressure cover. Perfect contact, even illumination and accurate exposure-time control, ensure high-resolution duplicates even from 48X reduction COM fiche masters. After exposure, the exposed diazo sheet is inserted in the developing slot, and the final copy image is delivered in 22 seconds. It can also make vesicular film exposures which are developed by a separate heat process using the Canon Kal-Developer 360H. The Kal-Ficher 480 is a quiet, space-saving unit of rigid construction, which is easily used in any office room, assuring users of years of odorless, trouble free film copying.

Canon Kal-Developer 360H, a compact reliable heat processor, instantly develops vesicular film exposed by the Kal-Ficher 480. The film is simply fed into the wide intake and uniformly heated by a rotating band. The final image is delivered in less than two seconds. Temperature is controllable, ranging from 80 to 150°C (180 to 300°F) for best development.

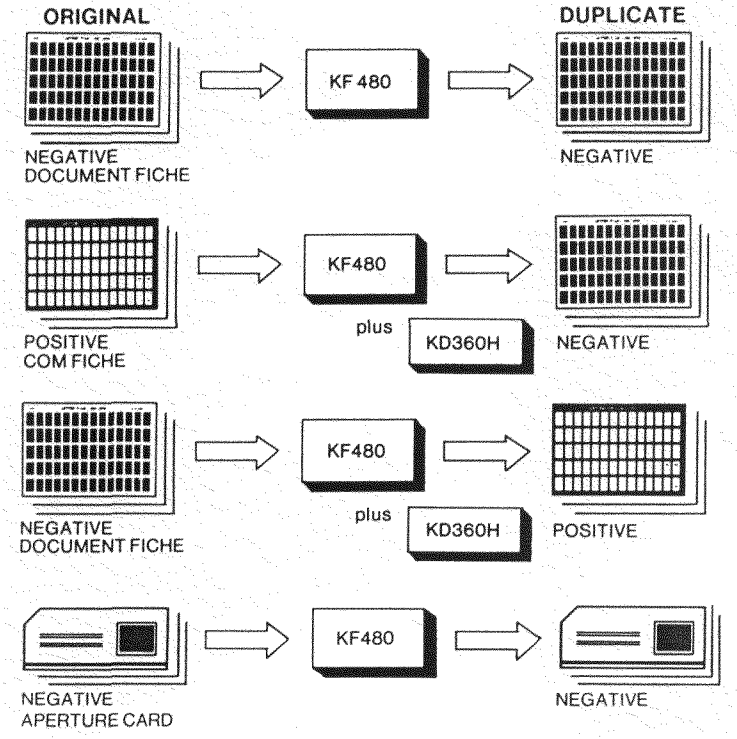


Features of Canon Kal-Ficher 480

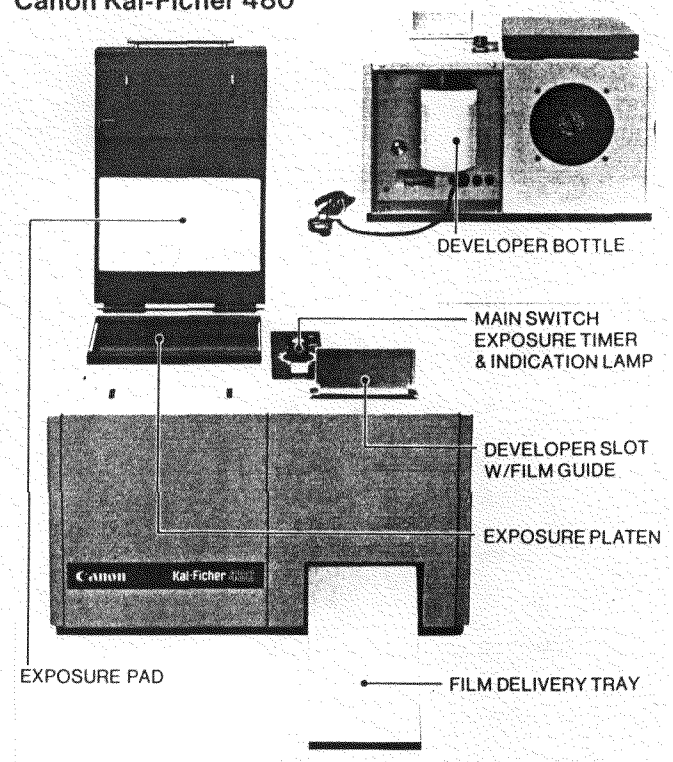
- Small, low electrical power, and simple-to-use, ideal for any office
- High-quality film duplicates from high-reduction COM-42X/48X fiche as well as from jacketed film
- Quick film registration on scratch-free flat exposure glass platen
- Accurate exposure timer control for optimum image density
- Odorless developing system
- Designed for complete safety
- Solidly constructed for extended use
- Easy replacement of solution and lamp

Features of Canon Kal-Developer 360H

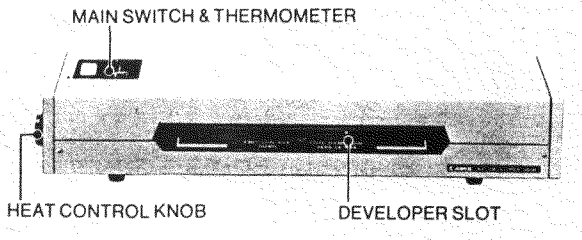
- Wide developing slot, accepts two fiche at a time
- Fast, constant, and scratch-free film transport
- Rotating heated silicone-rubber band for even image density
- Simple knob adjustment for developing temperature
- Assured reliability



Canon Kal-Ficher 480



Canon Kal-Developer 360H



Specifications of Canon Kal-Ficher 480

Type:	Desktop card-to card printer-processor
Film:	Master: Standard (105mm×148mm), Super (105mm ×187mm) fiche, jacket or aperture card of silver or black diazo films Duplicate: Diazo film
Exposure Area:	110mm×190mm (4-5/16″×7-1/2″)
Film Holder:	Scratch-free flat glass platen w/silicone rubber pressure pad
Exposure Control:	Adjustable range 2—80 seconds by electronic timer
Light Source:	400W mercury arc lamp 2000 hours rating
Cooling Exposure Plate:	Fan-Cooled
Developer Slot:	106mm (4-3/16″)
Development:	Circulated aqueous ammonia fumes, heated at 85°C (185°F). Odorless
Transport Speed:	6.7 mm/second (0.264″)
Developer Supply:	250CC ammonia solution 25—28% with 500 fiche capacity
Controls:	Power Switch, Exposure Pilot Lamp, Density Knob
Standard Accessories:	Supply Bottle, Developer Film Guide, Receiving Tray, Dust Cover
Electrical Requirements:	120V 60Hz, 220V 50Hz, or 240V 50Hz; 700W
Dimensions:	H.295mm×W.440mm×D.340mm (11-5/8″×17-5/16″×13-3/8″)
Weight:	25kg (55.1 lb)

The specifications may be modified without prior notice.

Specifications of Canon Kal-Developer 360H

Type:	Desktop heat processor
Film:	Exposed vesicular film
Developer Slot:	360mm (14-3/16″)
Development:	Rotated silicon rubber band heated at 125°C (257°F) Adjustable temperature range 80—150°C (180—300°F) Bimetallic thermostat
Transport Speed:	60mm/second (2-3/8″) at 50Hz, 71mm/second (3-13/16″) at 60Hz
Controls:	Power Switch, Heat Control Knob with thermostat
Electrical Requirements:	120V 60Hz, 220V 50Hz, or 240V 50Hz; 600W
Dimensions:	H.120mm×W.650mm×D.194mm (4-3/4″×25-5/8″×7-5/8″)
Weight:	10.2kg (23 lb)

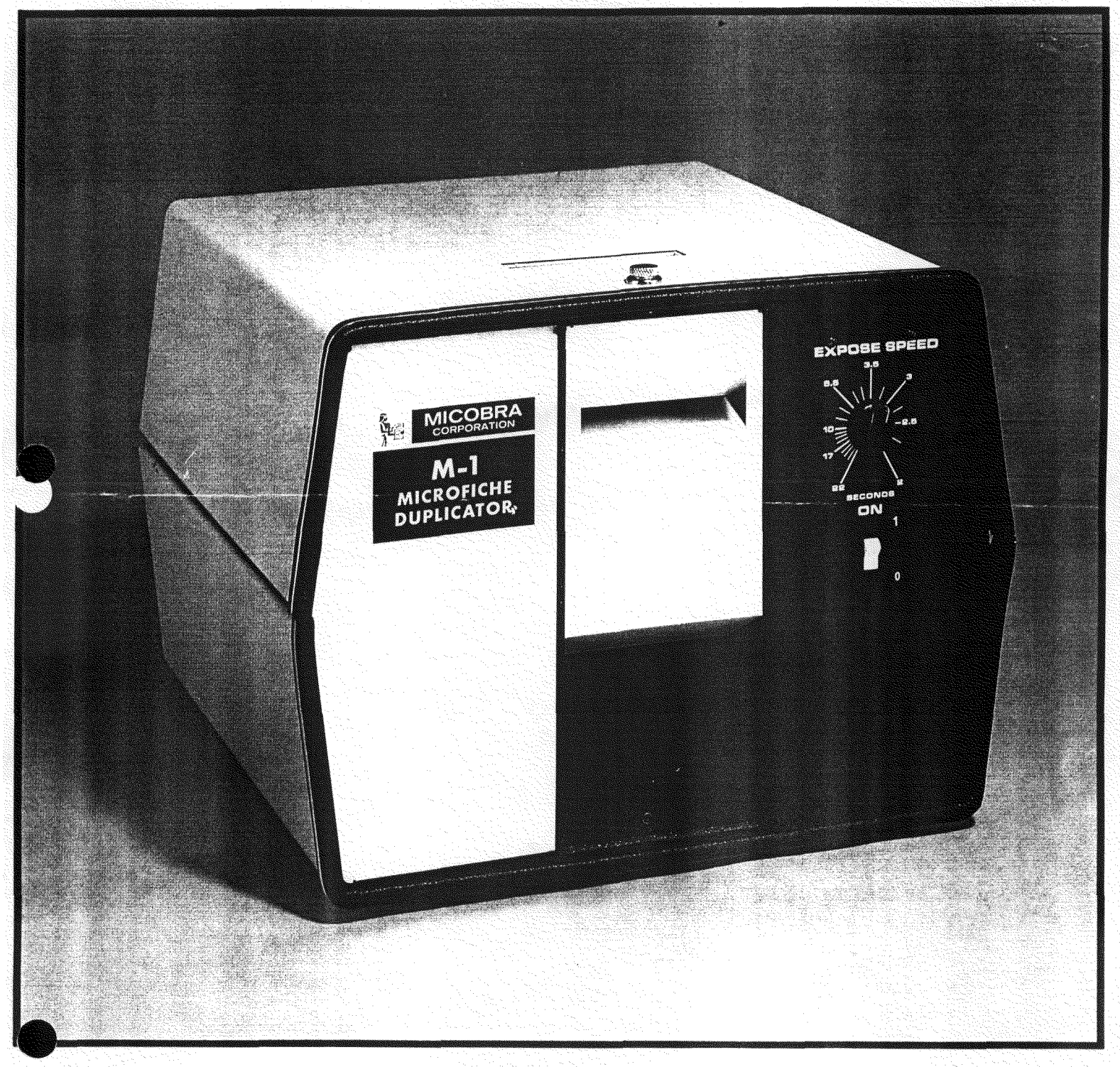
Canon

CANON INC.
7-1 NISHI-SHINJUKU 2-CHOME, SHINJUKU-KU, TOKYO 160, JAPAN
CANON EUROPA N.V.
VAN LEIJENBERGHLAAN 221, 1008 AC AMSTERDAM, THE NETHERLANDS
CANON U.S.A. INC.
ONE CANON PLAZA, LAKE SUCCESS, N.Y. 11042
CANON CANADA INC.
6390 DIXIE ROAD, MISSISSAUGA, ONTARIO L5T 1P7, CANADA
CANON LATIN AMERICA, INC.
APARTADO 7022, PANAMA 5, REP. OF PANAMA
CANON AUSTRALIA PTY. LTD.
1/37 WATERLOO ROAD, NORTH RYDE, SYDNEY N.S.W. 2113, AUSTRALIA

THE MICOBRA CORPORATION

Presents the All New

M-1® ROTARY MICROFICHE DUPLICATOR



THE MICOBRA CORPORATION
176 KING STREET – P.O. BOX 1187
HANOVER
MASS 02339

From **MICOBRA . . .** *THE NEXT STEP IN MICROFILM SYSTEMS AND HARDWARE*

M-1® ROTARY MICROFICHE DUPLICATOR

The newly designed M-1® Microfiche Duplicator represents a dramatic leap forward in rotary microfiche duplication. It employs a patented new optical system which utilizes reflected light from a powerful U.V. lamp onto angled dichroic mirrors to guarantee the highest possible resolution.

It provides crisp, high quality diazo copies in 12 seconds and vesicular copies in half the time, depending upon the controlling factors of film densities and copy film speeds.

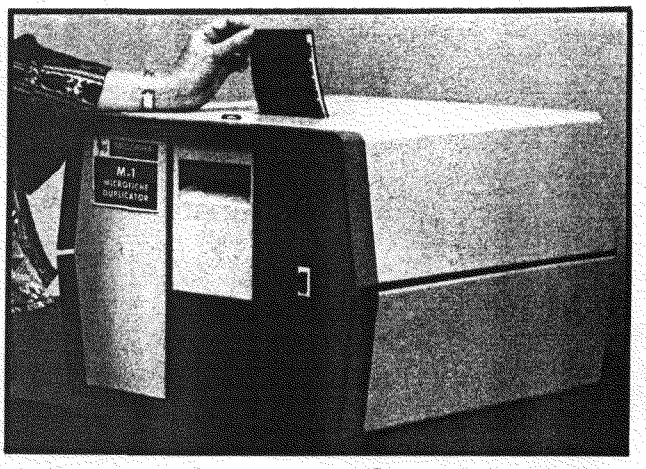
Simple, automatic exposing system of operation assures uniformly excellent results every time. The operator need only set the exposure dial, match the microfiche master or jacket with the copy film and insert into either the top or front feed chute, conveniently located for either stand-up or sit-down operation.

A front return stacking tray allows up to 100 masters and copies to accumulate in sequence before separation for development purposes.

— Front Entry Chute —

FEATURES

- ☐ Compact-table-top
- ☐ Simple to operate
- ☐ High resolution
- ☐ Bi-modal: exposes both diazo and vesicular film
- ☐ Fast — 300-500 copies per hour in one-on-one throughput applications
- ☐ Transportable, economical & rugged



— Top Entry Chute —

SPECIFICATIONS

Lamp: 800W U.V. Metal Additive
1000 hour life

Exposure Range: Variable to 30 seconds

Electrical Requirements:
110V-60HZ 10 Amps 1120W
230V-50HZ 5 Amps 1120W

Cooling System: Two 100 CFM fans

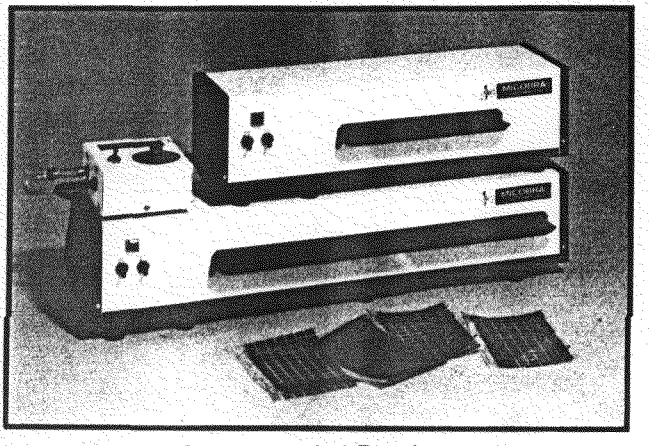
Warm-up Time: Three minutes

Heat Dissipation:
3822 BTU/hour

Dimensions:
Height: 13¼" (337 mm)
Width: 17¾" (451 mm)
Depth: 19" (483 mm)

Net Weight: 85 lbs. (38 Kg)

Shipping Weight: 100 lbs. (45 Kg)



Marketed By:

Recommended Developers:
D- 18® w/Metering Pump for, Diazo Film
D- 15® for Vesicular Film

THE MICOBRA CORPORATION

PROUDLY PRESENTS A NEW INDUSTRY CLASSIC

THE A-9 III MICROFORM DUPLICATOR

THE MICOBRA CORPORATION
176 KING STREET – P.O. BOX 1187
HANOVER
MASS. 02339

From **MICOBRA . . .** ***THE NEXT STEP IN MICROFILM SYSTEMS AND HARDWARE***

A-9® III MICROFORM DUPLICATOR

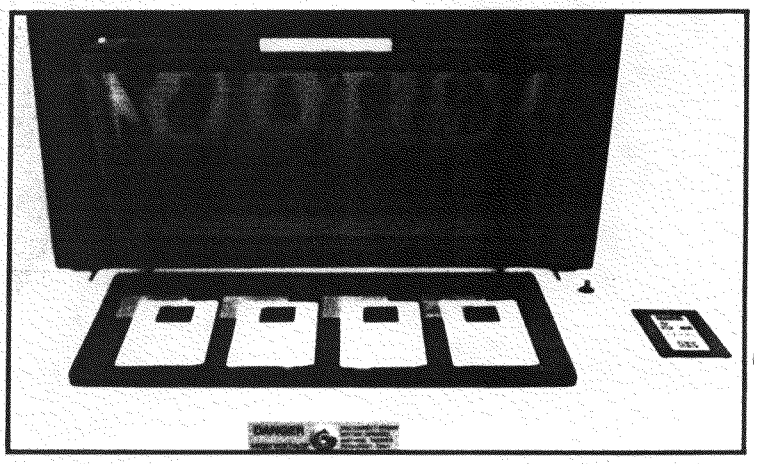
The superbly engineered A-9 III is a single-sided, vacuum frame contact printer for the duplication of both diazo and vesicular copy films. With its attractive, low-profile styling it blends in nicely with today's office environment.

The exposure area accommodates three microfiche/jackets or four aperture cards in a matter of seconds allowing realistic exposures of 400-800 copies per hour dependent upon normal duplicating factors.

The A-9 III employs a snap-action shutter system to eliminate chance of under or over-exposure. A Mini-ECU (Electronic Control Unit) governs all functions of the unit while employing built-in safety precautions to prevent copy waste due to operator miscalculations.

FEATURES

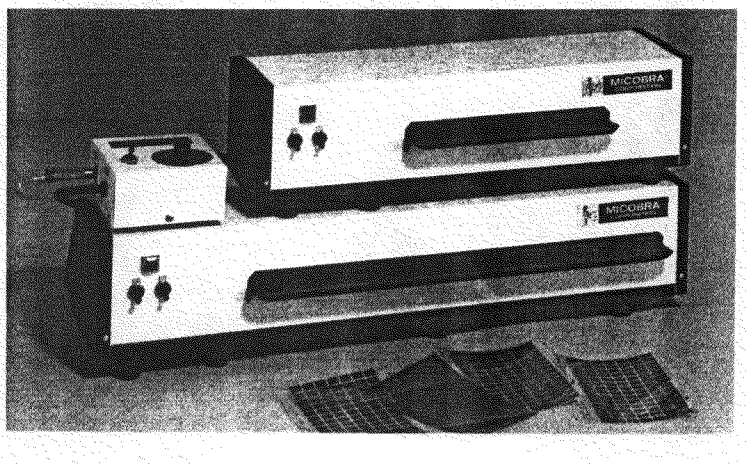
- ☐ Table-top low-style model
- ☐ All functions governed by ECU
- ☐ Exposes 3 fiche or 4 aperture cards
- ☐ Bi-modal — exposes both diazo and vesicular film
- ☐ Snap-action shutter for exact exposure
- ☐ Minimal moving parts for long, low-maintenance life
- ☐ Human engineered for operator safety and convenience



4-up Aperture Cards

SPECIFICATIONS

Resolution: Minimum 200 LPM
Exposure Area: 8½" × 16" (216 × 406mm)
Lamp: 1000W special-medium pressure
Mercury Vapor - 3000 hour life
Exposure Range: Touch control setting up to 99 seconds
Electrical Requirements:
110v/60 Hz. 15 Amps 1200 W
230v/50 Hz. 7.5 Amps 1200 W
Dimensions:
Height: 16" (406 mm)
Width: 29½" (749 mm)
Depth: 20" (508 mm)
Heat Dissipation:
4100 BTU/hour
Warm-up Time: 3-5 minutes
Net Weight: 140 lbs. (62 Kg)
Shipping Weight: 165 lbs. (75 Kg)



Marketed By:

Recommended Developers:
D-18® w/Metering Pump for Diazo Film
D-15® for Vesicular Film

THE MICOBRA CORPORATION
176 KING STREET – P.O. BOX 1187
HANOVER
MASS. 02339
(617) 871-2610

Press Release

FOR IMMEDIATE RELEASE

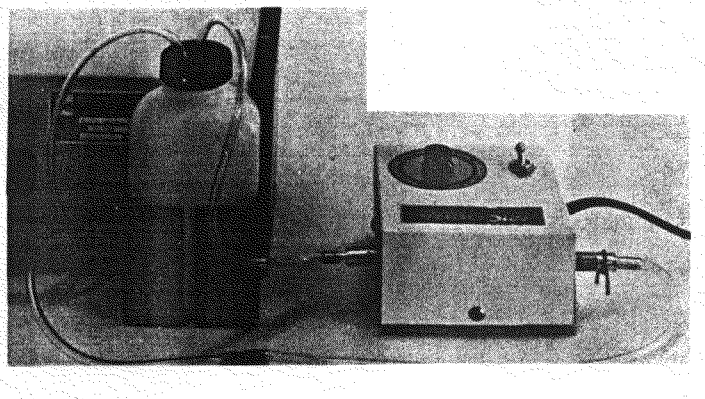
Hanover, MA – The MICOBRA CORPORATION is introducing a specially designed metering pump as an accessory option to its ammonia diazo developers.

The new pump controls the flow of ammonia on a constant and continuous basis during operating hours eliminating the need for depressing plastic pump plungers.

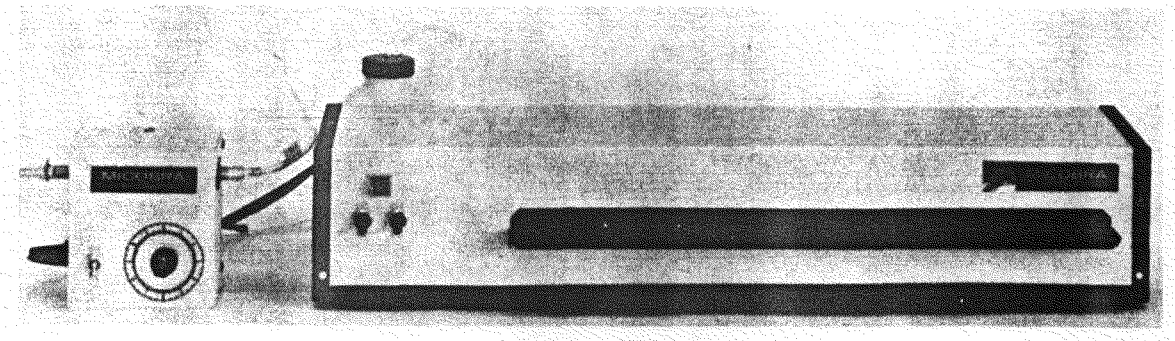
The D-12 and D-24 Developers have been modified internally so that when operating in conjunction with the new metering device, full strength ammonia can be diluted with water at a 2 - 1 ratio allowing full development of any diazo film on a one-pass through basis. The D-11 can also be modified.

The new dispensing system was designed to allow end-users to continue to use amonia-developed film without encountering excess ammonia fumes in closed areas and will ensure adherence to any and all OSHA requirements.

The modification to the developers will not disturb the basic premise of using the standard "bottle-pump and cap" approach to dispensing ammonia into the developer should it be desired.



For further information write or call:
THE MICOBRA CORPORATION
176 King Street, P. O. Box 1187
Hanover, MA. 02339
(617) 871-2610

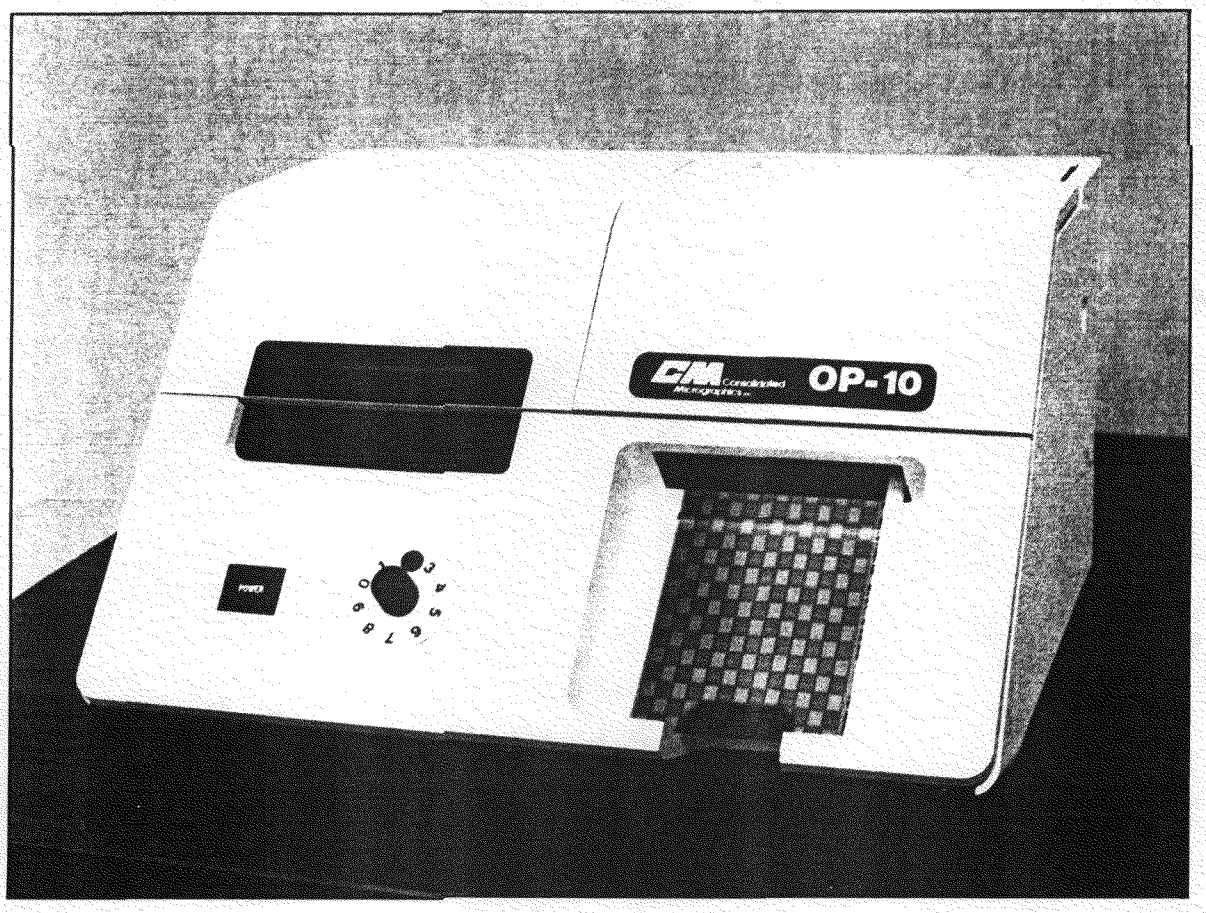


METERING PUMP SHOWN with D-12® DIAZO DEVELOPER

Consolidated Micrographics, INC.

OP 10/11 Table-Top Microfiche Duplicators

Portable Unit Perfect for Quality Copies at a Low Cost



The OP 10/11 Microfiche Duplicators are convenient, compact machines capable of producing up to 120 microfiche copies per hour.

The OP 10 (Diazo) and OP 11 (Vesicular) are ideal for handling the entire duplicating needs of satellite operation, on-demand copying situations and as a back-up to your high-volume duplicators.

The OP 10/11 Duplicators feature:

- A Completely Self-Contained System.
- Stationary Exposure for Maximum Resolution
- Virtually Maintenance-Free Operation
- Lightweight and Portable.
- No Venting–No Special Wiring.

Convenient, Easy Operation

Weighing less than a typewriter, the OP 10/11 Duplicators plug in virtually anywhere, and can sit on any handy desk top. Operation is simple: Just place your original and a piece of copy film into the exposure area, then after exposure, insert the duplicate film into the developer slot. Within seconds you have a top-quality fiche ready for immediate use. You can also begin to copy another original during the few seconds the first copy is being developed. The OP 10/11 Duplicators accept 105mm x 148 mm fiche original masters, either COM or source document, and accept strip-up or adhesive master up to 4 1/16" x 6".

SPECIFICATIONS
OP 10/11 Table-Top Microfiche Duplicators

With the quick, easy duplicating procedure of the OP 10/11, you can make up to 120 copies per hour.

Master Input

105mm x 148mm fiche masters, eight COM or source document. Jackets–strip-up or adhesive masters, up to 4 1/16" x 6".

Copy Film Input

Cut sheet film up to 4 1/16" x 6".

Dimensions

Length 17", depth 17½", Height 9¾". (43 cm x 44 cm x 25 cm).

Weight

44 pounds (20 kg).

Power

120 Volts AC, 60 Hz single phase, 5 amperes.
230 VAC ± 10%, 50 Hz, 3 amps.

CM Consolidated Micrographics

27631 La Paz Road, P.O. Box A-4
Laguna Niguel, California 92677
(714) 643-0400 Telex: 6831098

CM OP 621/OP 631 Compact Microfiche Duplicators

Consolidated Micrographics' OP 621 and OP 631 microfiche to microfiche duplicators provide fast, reliable and high resolution duplication in a unique, one-step unit.

No longer are separate exposure and developer units required. No longer must operators manually separate masters from duplicates. With the OP 621 and OP 631, the master and the copy film are simply inserted into the input slot. A few seconds later the master is returned, followed shortly by the crisp, clear duplicate.

PERFECT FOR JACKET APPLICATIONS

The OP 621 (Diazo) and OP 631 (Vesicular) are ideal for the medium volume fiche or jacket duplicating needs of satellite operations and on-demand copying situations, and as a back up to high volume duplicators.

- ☐ **Versatile.** Both Diazo and Vesicular units accept COM, source document fiche and jacket masters.
- ☐ **Safe.** Internal failsafe system returns film in the event of misfeed, misalignment, torn or bent film—masters cannot be harmed.
- ☐ **Fast.** Duplicates up to 600 copies per hour, allows multiple feeding and eliminates manual separation of master and duplicate.
- ☐ **Reliable.** Sensible modular design assures trouble-free operation and allows operator to perform many service requirements.
- ☐ **Compact.** Single unit design for tabletop operation.
- ☐ **Simple.** Easy operation with front-panel controls; no special ventilation or wiring required.
- ☐ **Economical.** Increases fiche to fiche productivity, reduces labor costs and is competitively priced.

The OP 621 and OP 631 duplicators are from the industry leader in microfiche duplication, storage and retrieval systems, Consolidated Micrographics. Our reputation for reliability, innovation and service can't be duplicated.

CM Consolidated

CONSOLIDATED MICROGRAPHICS OP 621 & OP 631 SPECIFICATIONS

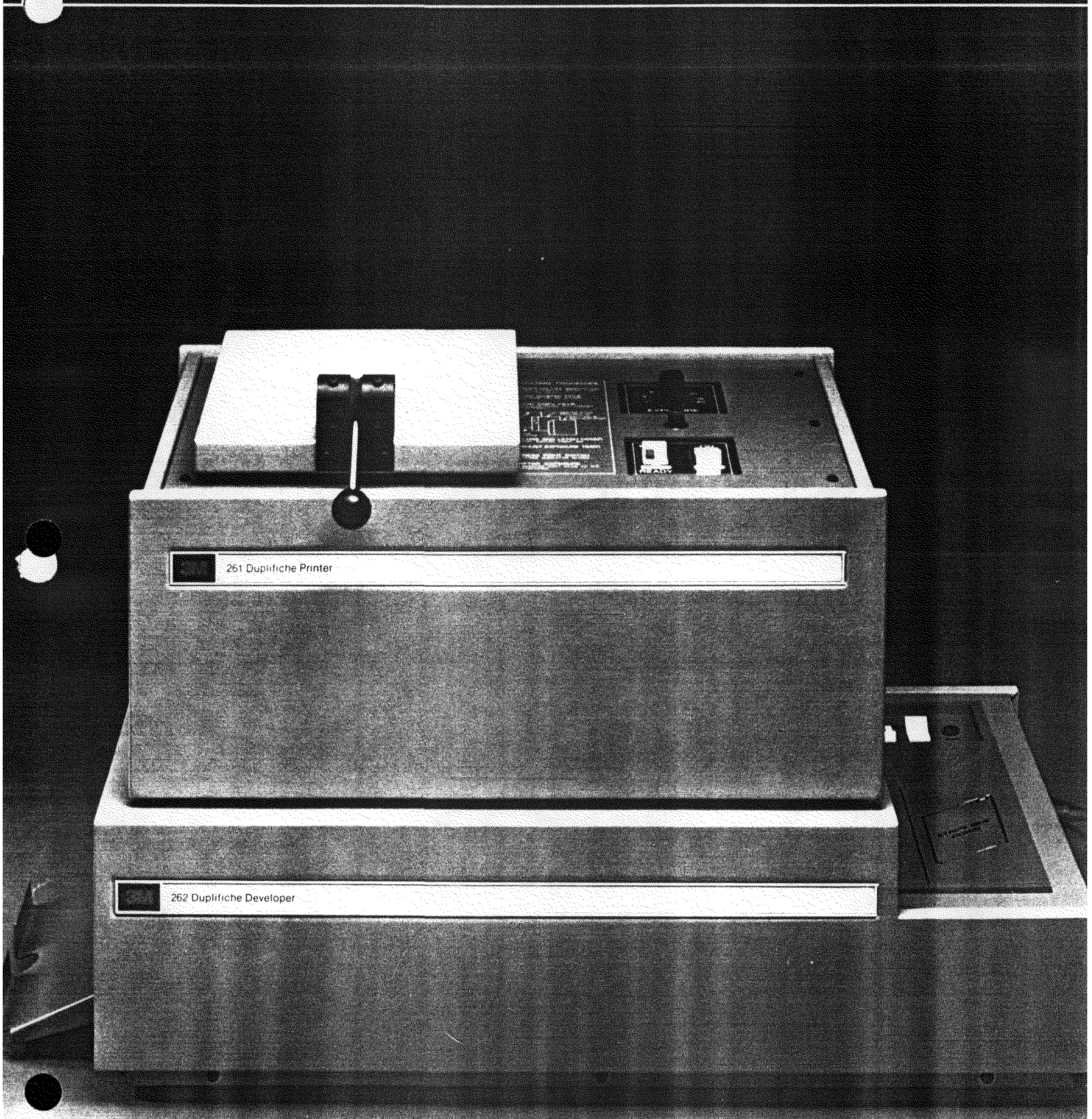
Description	OP 621	Diazo microfiche to microfiche manual duplicator with automatic separator and failsafe feed system.
	OP 631	Vesicular microfiche to microfiche manual duplicator with automatic separator and failsafe feed system.
Dimensions	OP 621 & OP 631	19″ wide × 12″ high × 28″ deep. (47.5 cm × 30cm × 70 cm)
Weight	OP 621 & OP 631	Unit: 110 lbs. (54.5 kg), 60 Hz; 125 lbs, (57 kg), 50 Hz Shipping: 187 lbs. (85 kg), 60 Hz; 202 lbs. (91 kg), 50 Hz
Film	OP 621 & OP 631	105mm × 148mm, or 4″ × 6″, 4 to 7 mils. Requires AIIM standard 6mm × 6mm corner cut.
Process speed	OP 621	Up to 600 copies per hour, 12 second delivery for first copy, 6 second multiple copy through-put.
	OP 631	Up to 600 copies per hour, 9 second delivery for first copy, 6 second multiple copy through-put.
Power	OP 621 & OP 631	110/115VAC, 60 Hz, 20 AMP single phase domestic. 208/220VAC, 50 Hz, 10 AMP single phase international.
Exposure	OP 621 & OP 631	750 Watt mercury vapor lamp with adjustable shutters.
Development	OP 621	Aqueous ammonia, electronically controlled. No special venting required.
	OP 631	Rotating heat drum, thermostat controlled.
Controls	OP 621	Front: On/off switch, exposure control , copy counter, ammonia switch.
	OP 631	Front: On/off switch, exposure control, copy counter.

27631 La Paz Road, P.O. Box A-4
Laguna Niguel, California 92677
(714) 643-0400 Telex: 6831098

Consolidated Micrographics, INC.

261/262 Duplifiche Printer-Developer

3M

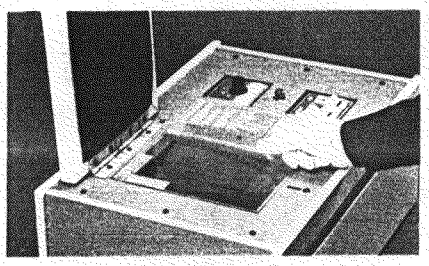


DIAZO FILM

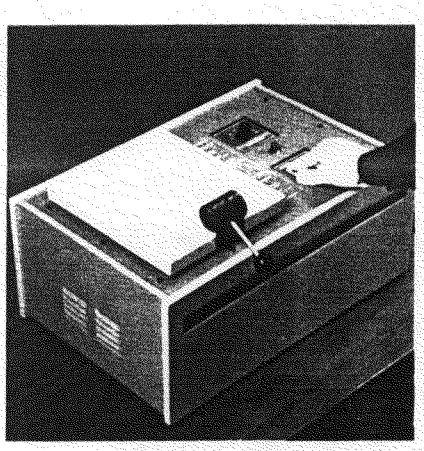
18.80/100

261/262 Duplifiche Printer-Developer

The 3M Duplifiche Printer Developer is a tabletop combination printer/developer for dry diazo and vesicular films. The 3M Duplifiche System is the only bi-modal, (sign maintaining or sign reversing microcopying) AMMONIA-FREE system available. The 3M 261/262 Duplifiche Printer/Developer is designed for low- to medium-volume microcopying, or as a "satellite" in a large system. It is compatible with all film duplicating systems, with an added dimension—THERMAL, AMMONIA-FREE DEVELOPMENT.

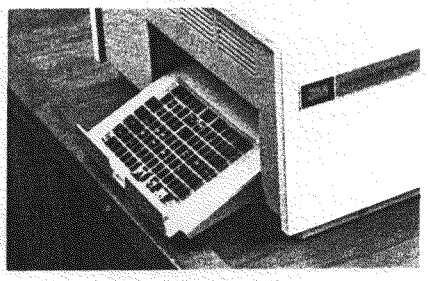


The 261 Duplifiche Printer is a compact exposing device for standard 105mm x 148mm (4" x 6") microfiche and jackets and tab size 85.7 x 187.3mm (3⅜" x 7⅜") microfiche and jackets. The Duplifiche Printer provides high-quality exposures onto either Dry Diazo (sign-maintaining) or Vesicular (sign-reversing) microcopy films from Silver Halide, Dry Silver, and Diazo masters or jackets.



The 261 Duplifiche Printer has a variable exposure control. The controls are ON/OFF switch, Exposure, Time and Print.

The 262 Duplifiche Developer provides high contrast duplication of both Dry Diazo and Vesicular Films. Film development is controlled by two speed options and a pre-set film temperature.



The operator takes the exposed film from the 261 Duplifiche Printer, inserts it into the 262 Duplifiche Developer, and selects either a Vesicular or Diazo mode. The film exits onto a receiving tray. No operator adjustments are necessary.

Typical Machine Characteristics

261 Duplifiche Printer

Master Film Format: Standard 105mm x 148mm (4" x 6") microfiche and jackets and Tab Size 85.7mm x 187.3mm (3⅜" x 7⅜") microfiche and jackets.

Master Film: Silver Halide, Dry Silver, Diazo.

Copy Film Format: Standard 105mm x 148mm (4" x 6") microfiche and jackets and Tab Size 85.7mm x 187.3mm (3⅜" x 7⅜") microfiche and jackets.

Copy Film: Dry Diazo, Vesicular

Speed: 4-6 duplicates per minute

Dimensions: 18.5"w x 10.5"h x 12"d (470mm x 267mm x 305mm)

Weight: 38.5 lbs. (17.5 Kg)

Light Source: 400W Mercury Vapor Lamp

Electrical Requirement: 115 volts, 60 Hz 10 amps — with taps at 105, 115 and 125 volts. International — 90/250 volts, 50 Hz 10/5 amps.

Specifications noted herein are subject to change without prior written notice.

262 Duplifiche Developer

Copy Film Format: Standard 105mm x 148mm (4" x 6") microfiche and jackets and Tab Size 85.7mm x 187.3mm (3⅜" x 7⅜") microfiche and jackets.

Copy Film: Dry Diazo, Vesicular

Speed: 35 seconds maximum for the first Dry Diazo microcopy, successive copies at a rate of 6-8 per minute. 6.5 seconds maximum for the first Vesicular microcopy, successive copies at a rate of 28 per minute.

Dimensions: 26.1"w x 7.6"h x 14.8"d (663mm x 194mm x 375mm) plus 4"(102mm) standard microfiche exit tray projection.

Weight: Approximately 40 pounds (18Kg)

Electrical Requirement: 115 volts, 60 Hz 10 amps. International 90-250 volts, 50 Hz 10/5 amps.

Specifications noted herein are subject to change without notice.

78-1757-7807-1 (412) JR

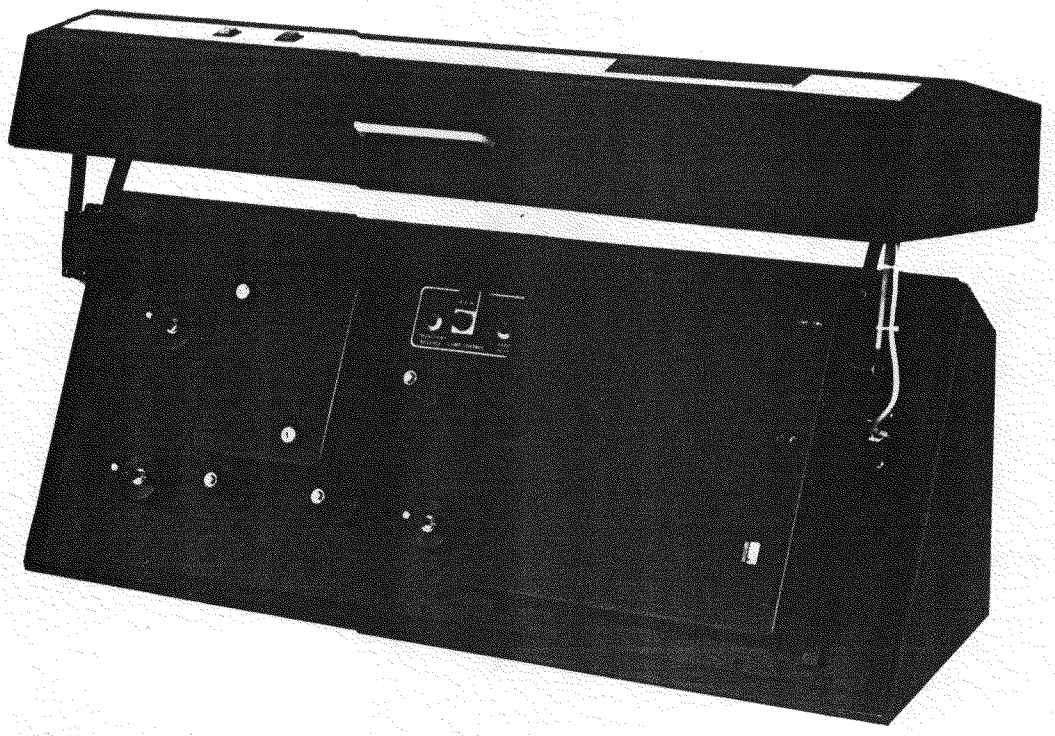
Litho in U.S.A. with 3M BRAND Photo Offset Plates, Film and Chemicals.

Micrographic Products Division 3M
220-9E 3M Center
St. Paul, Minnesota 55144

3M

Silver Film Duplicator Model 2101

extek

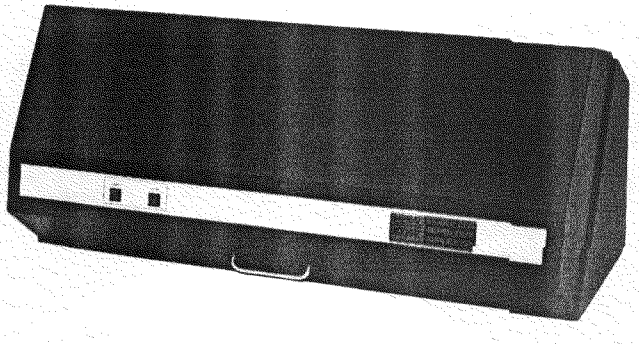


Model 2101 shown with the Model 2102 magazine in place.

- **Daylight Operating**
- **Unattended Operation**
- **Automatic Step Test**

Extek's Model 2101 is a desk top silver roll film duplicator designed to meet the needs of users having low volume microfilm duplicating requirements. It is compact, completely self-contained, and is suitable for use in an office environment. Automatic features allow unattended operation.

The duplicating film supply is carried in the Model 2102 magazine. The magazine is demountable for darkroom loading. Its self-threading design provides an additional convenience. An easily read indicator shows the film remaining in the magazine. Alternatively, the duplicating film may be in an inexpensive, reusable cartridge. A quantity of the cartridges may be loaded in advance with Extek duplicating film and then used as needed. An indicator shows the length of film remaining in the cartridge.



Simplified controls make the Model 2101 easy to use. The exposure control dial is not accessible during the duplication cycle, eliminating the possibility of uncontrolled change during unattended operation. Upon completion of the duplicating cycle the Model 2101 automatically stops. Visible and audible signals announce the completion.

A unique automatic step test feature of the Model 2101 is another convenience. In the test a short length of duplicating film is automatically exposed at a series of different exposure values. From the measured densities on the test film the exposure dial setting needed to achieve the desired density of the actual duplicate can be easily determined.

10-82-1 (2500)

SPECIFICATIONS

Film Size:

16 mm or 35 mm, with magazine; 16 mm, with cartridge.

Thickness 2.5 mil to 6 mil.

Master and duplicating films may be different thickness.

Both master and duplicating films have sprocket holes; however, sprocket-hole registration is not maintained.

Film Type:

Master — Silver Halide, Diazo or Vesicular.

Duplicate — Silver Halide — Print film (image reversed).
Direct duplicating film (image not reversed).

Film Capacity:

Duplicate Supply	Max. Roll Dia.	4.2 mil	2.7 mil
Magazine	10.6 in (27 cm)	1600 ft (488 m)	2400 ft (731 m)
Cartridge	—	1246 ft (380 m)	2630 ft (800 m)

Master Supply	5 mil	4 mil	2.5 mil
Camera type reels	120 ft (36 m)	150 ft (49 m)	220 ft (67 m)

Duplicating Speed:

10 ft per min (3 m per min), fixed.

Automatic Step Test:

Six levels of exposure, with signature between levels. Increments are 2% of full exposure range, beginning from baseline of exposure control dial setting.

Electrical:

Model	AC Input (single phase)	Current
2101	95 to 130 volts, 60 Hz	1.2 amps, max.
2101E	190 to 260 volts, 50Hz	0.6 amps, max.

Environment:

Daylight operation.

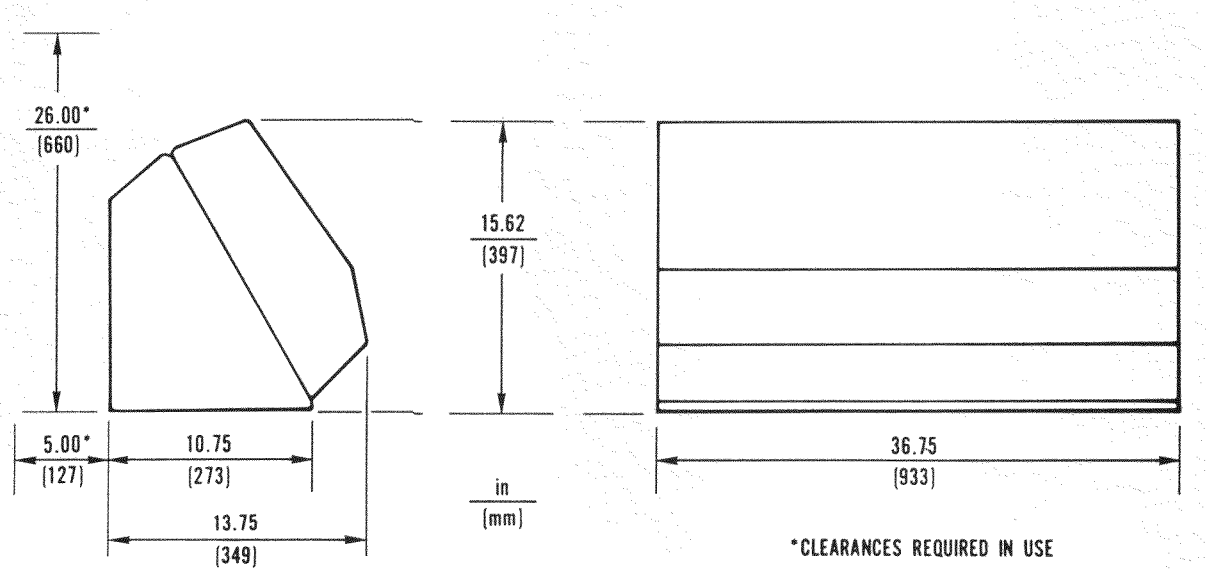
Recommended relative humidity range 60 to 85%.

Heat load less than 500 BTU per hr (150 watts).

Weight:

Model	Unit Wt.	Shipping Wt.
2101	77 lb (35 kg)	105 lb (48 kg)
2101E	77 lb (35 kg)	105 lb (48 kg)
2102	10 lb (4.5 kg)	12 lb (5.5 kg)

DIMENSIONS



ACCESSORIES

Model 2102 Magazine (spare)

Model 2103 Cartridge Adapter (spare)

Spare Parts Kits:

Contain an assortment of replaceable parts. Level I kit is for users having local service. Level II kit is for service organizations and users who must maintain the equipment themselves.

Film Cleaner:

The Extek Model 6065 automatic film cleaner may be used to clean the master film before duplicating.

Densitometer:

The Extek Model 4004 digital densitometer is a convenient tool for quality control of duplicates.

SUPPLIES

Film:

Extek Type 211 Direct Duplicating Film. 16 mm x 1246 ft (380 m), 4.2 mil polyester base.

Cartridge:

Reusable plastic cartridge. Accepts Type 211 film.

ORDERING INFORMATION

The Model 2101 and Model 2101E are available with either the Model 2102 magazine or the Model 2103 cartridge adapter. When ordering, specify whether the magazine, or the cartridge adapter, is desired.

Specifications subject to change without notice.

extek

Extek Microsystems, Inc.
6955 Hayvenhurst Avenue
Van Nuys, California 91406
Telephone: (213) 989-2630
Telex: 651465

Model 3100/3150 Silver Film Duplicator

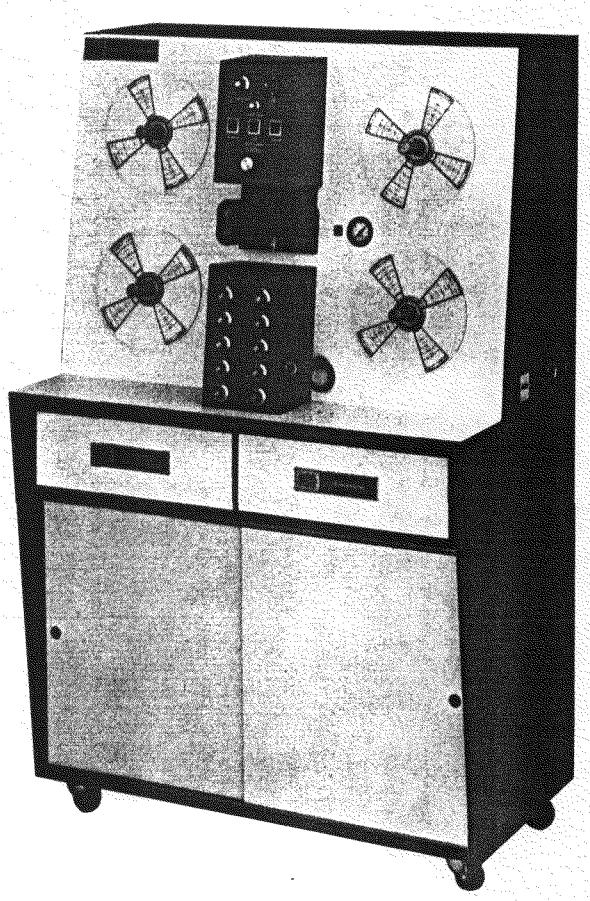
extek

EXTEK offers a new generation of roll-to-roll microfilm duplicators. The 3100 is for 16mm and 35mm film. The 3150 handles 16mm through 105mm film. Both incorporate Extek's patented vacuum method to insure high quality copies free from optical distortions and film slippage.

The new Extek generation of silver film duplicators is based on the successful design of Extek's well-known equipment which has proved itself in extensive use in microfilm centers throughout the world. The convenience of operation features have been retained and improvements made in response to user experience. The design simplicity which accounts for the excellent reliability of earlier models has also been retained.

The 3100 and 3150 are free-standing units with two storage drawers, one of which is light-tight for storing unexposed film. A large storage space is beneath.

Ease of operation, vacuum registration, reliability and excellent resolution make Extek's 3100 and 3150 duplicators the clear choice for microfilm centers desiring quality output.



EXTEK'S VACUUM REGISTRATION METHOD provides flat, distortion-free exposure. The capstan and tensioning rollers with their attendant distortion and slippage are eliminated. Newly designed vacuum heads are easily threaded and can handle spliced film.

LOOP MODULE (optional) allows multicopy duplication from a master film.

SEQUENTIAL DENSITY PROGRAMMER (optional) produces duplicates of uniform density from a master roll having up to eleven segments of differing density. No film notching is required.

COUNTER (optional) can be set by the operator for multicopy duplicating runs. Duplicator is shut off automatically at end of run to preserve film stock.

SMALL SPINDLES can be supplied (as an alternate) for handling 100 foot microfilm reels.

CABINET is coaster-mounted for complete mobility and ease of maintenance. A table-top version is also available.

OPTIONAL FEATURES
& Ordering Information

Loop Module
Handles from 8 to 100 feet of 16mm or 35mm film, or 8 to 44 feet of 16mm to 105mm film.

Counter
Preset by operator to desired number of copies of looped master. May also be used to select a predetermined film length for duplication.

Sequential Density Programmer
Programmer and Counter may be ordered separately or together, but must be specified when ordering.

Small Spindles
Specify when ordering if these alternate spindles are desired.

Table Top Models
Order as 3100T or 3150T.

WARRANTY AND SERVICE

Equipment is warranted to be free of defective material or faulty workmanship for a period of 90 days from the date of installation. A written warranty is supplied. Service is available through Extek in the continental United States.

SPECIFICATIONS
Models 3100 and 3150

Film Size: ..... Model 3100 16mm and 35mm
Model 3150 16mm through 105mm
2 to 7.5 mil thickness

Film Type: ..... Silver print film or
Silver direct duplication.

Film Capacity: ..... 1,000 ft. (4 mil) (standard spindles — 1 in.)
100 ft. reels (small spindles — 5/16 in.)

Duplicating Speed: .... 325 feet/min., max.
variable speed control.

Electrical: ..... 105 to 125 volts 60 Hz, single phase.
Also available for 50-Hz - operation
15 amps (5,900 BTU/hr) when duplicating,
less than 0.5 amp (200 BTU/hr) in standby.

Lamp: ..... 250 watt quartz-halide rated at 1,000 hour life.

Size:

Model	Height	Width	Depth
3100 & 3150	65 in. (165 cm)	41 in. (104 cm)	24 in. (61 cm)
Table Top	30½in. (77 cm)	41 in. (104 cm)	24 in. (61 cm)

Weight:

Model	Basic Unit Wt.	Shipping Wt. (Approx.)
3100 & 3150	250 lbs. (113 kg)	315 lbs. (143 kg)
Table Top	205 lbs. (93 kg)	270 lbs. (122 kg)

Covered by U.S. Patent No. 3,468,606 and others, U.S. and foreign.

Specifications subject to change without notice

extek

Extek Microsystems, Inc.
6955 Hayvenhurst Avenue
Van Nuys, California 91406
Telephone: (213) 989-2630

Card-to-Roll Silver Film Duplicator Model 5101

extek

For Duplicating Fiche, Jackets, Strip-up Masters, Updatable or Dry Silver Fiche and Aperture Cards Onto Archival Silver Roll Film

VERSATILE

The Extek Model 5101 can be used for duplicating selectable quantities of individual fiche. The duplicate roll may then be converted to fiche using Extek's Model 410 Fiche Cutter. In another application, the Model 5101 can be used to generate a master roll or loop from cut fiche to facilitate volume production on a roll-to-roll printer, such as Extek's Model 3150 Silver Film Duplicator. The Model 5101 can also duplicate the film portion of aperture cards onto 35mm roll film.

FEATURES

- Safelight panel for checking order, and viewing fiche masters for identification and orientation.
- LED digital display of number of prints made, or remaining to be made, in current order.
- Thumb wheel switch to set pulldown, number of copies, and exposure time.

SPECIFICATIONS

Duplicating Films Accommodated:

Width — 105 mm, standard; 35 mm, optional; others to 5 inches (127 mm), optional

Thickness — 4 to 8 mil

Type — Silver Halide
- — Print film (image reversed)
- — Direct duplicating film (image not reversed)
- — Color film

Microforms (Masters) Accommodated:

Maximum Size — 5 in (127 mm) width by 9 in (228 mm) length

Thickness — 2.5 to 8 mil

Master and duplicating films may be different in thickness.

Type — Silver halide, diazo, vesicular, updatable, x-ray, color

Form — Sheets, strip ups, jackets

Duplicating Film Capacity:

Supply/Take-up	Max. Roll Dia.	4.2 mil	7 mils
105 mm	9 in (23 cm)	—	500 ft (152 m)
35 mm	10.6 in (27 m)	1600 ft (488 m)	—

Exposure Time:

Operator selectable up to 9.9 seconds in 0.1 second increments.

Film Advance (Pulldown):

Operator selectable up to 599.5 mm in 0.5 mm increments. Accuracy and repeatability ±0.5 mm.

Duplicating Rate (multiple copies of one master):

Approximately 1400 fiche (148 mm) per hour at 0.3 sec exposure time.

Electrical:

Model	AC Input (10)	Standby	Max
5101	100 to 130 volts, 60Hz	3 amp	5 amp
5101E	200 to 260 volts, 50Hz	1.5 amp	2.5 amp

Size & Weight:

Height: 50 in (127 cm); Width: 36 in (92 cm); Depth: 22 in (56 cm).

Model	Net Wt.	Shipping Wt.*	Crated Wt.
5101	275 lb (125 kg)	310 lb (141 kg)	400 lb (182 kg)
5101E	290 lb (132 kg)	—	415 lb (189 kg)

*U.S. and Canada

Specifications subject to change without notice.

extek

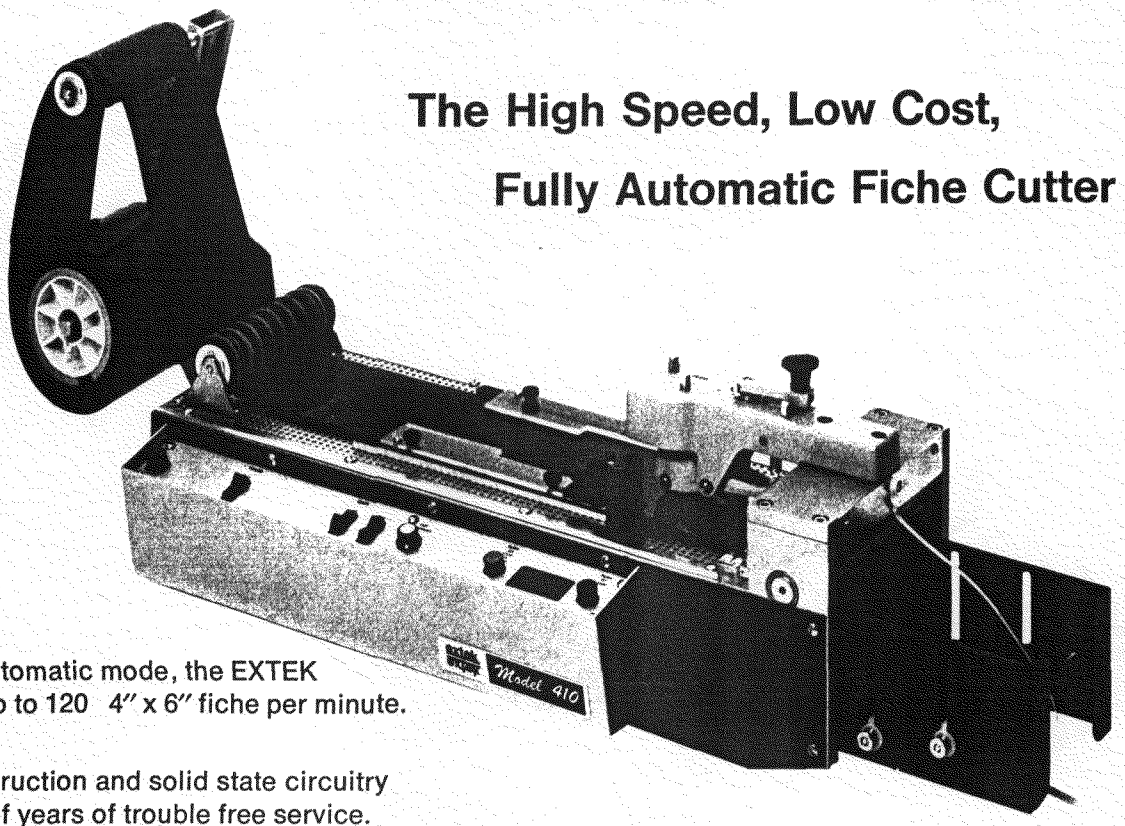
Extek Microsystems, Inc.
6955 Hayvenhurst Avenue
Van Nuys, California 91406
Telephone: (213) 989-2630
Telex: 651465

2-82-6 (4000)

Model 410 Fiche Cutter

extek

The High Speed, Low Cost, Fully Automatic Fiche Cutter



FAST
In the fully automatic mode, the EXTEK 410 will cut up to 120 4″ x 6″ fiche per minute.

RELIABLE
Precise construction and solid state circuitry assures you of years of trouble free service.

VERSATILE
The EXTEK 410 accommodates Silver, Diazo and Vesicular film widths from 2½″ to 5″, and film thickness from 2 to 10 mils.

PORTABLE
Compact size 35½″ long by 12″ wide, makes it "Table Top" easy to set up the EXTEK 410, where you want it.

The EXTEK 410 is a precision piece of equipment that you will find easy and convenient to operate. The accessible control panel contains all the controls necessary for either automatic or manual operation. The control panel is completely solid state for reliability and includes an adjustable sensor for positive and negative cut marks. The photo cell is adjustable to accommodate cut marks on either edge of the film.

The EXTEK 410 Fiche Cutter comes fully equipped for immediate operation. Power requirements are standard 115v, 60Hz.

An all inclusive, 60 day warranty on parts and labor is provided.

A fiche counter, foot switch and core adaptors are available as accessories.

Specifications

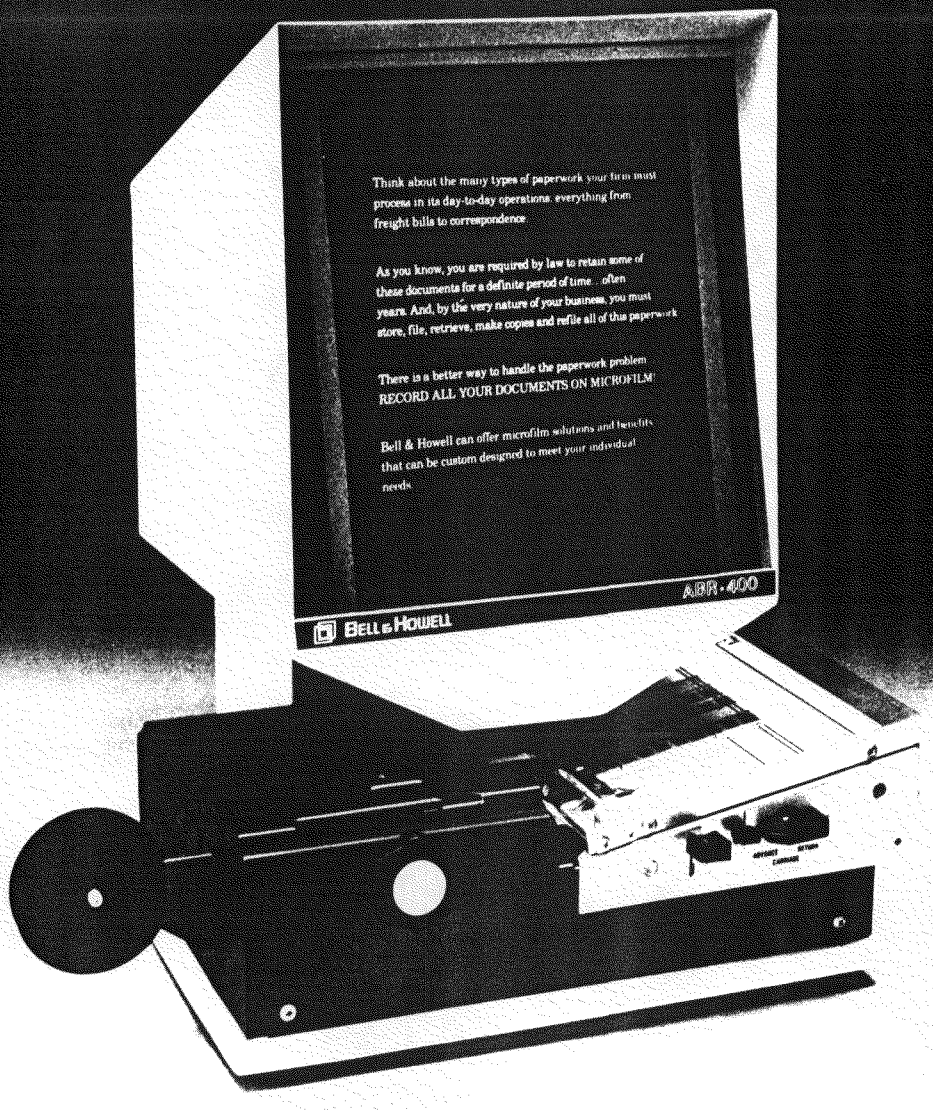
Dimensions	35½″ long x 12″ wide x 13″ high, including supply roll holder and print receiver.
Weight	50 lbs.
Film Type	Silver, Diazo, Vesicular.
Film Width	2½″ to 5″ (64 to 127mm) infinitely adjustable
Film Length	500 ft. (150m) roll maximum
Film Thickness	2 to 10 mils.
Cut Mark	Positive or Negative.
Output	120, 4″ x 6″ Fiche per minute.
Power Requirements	115v, 60Hz, 2 Amps. 230v, 50Hz, (foreign).
Accessories	Counter, Foot Switch, Core Adaptors.

Specifications subject to change without notice.

extek

EXTEK MICROSYSTEMS, INC.
6955 Hayvenhurst Ave., Van Nuys, Calif. 91406
Telephone (213) 989-2630

ABR-400 Jacket Reader/Filler



Fast, accurate jacket filing

This versatile jacket filler, with large 11-1/2" x 12" non-glare reading screen, makes precision filing and updating of active business records fast, easy and extremely accurate. The Bell & Howell ABR-400 Reader/Filler cuts film and inserts it into micro-thin jackets in one simple step at a rate of up to 400 feet of microfilm or 800 jacket chambers an hour.

A brilliant optical system keeps the images sharp, clear, always in focus. Interchangeable 20X or 30X lenses provide large image verification, and its clearly displayed film cutting edge add to the accuracy of jacket filling.

A special waste release station disposes of unwanted film in a split second.

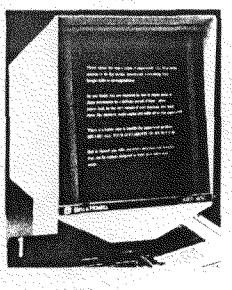
The ABR-400 jacket filler accommodates both thick (5.5 mil) and thin (2.5 mil) film. Inside the jacket, film is protected between panels of tough, transparent polyester material — no matter how often records are retrieved, duplicated or updated.

And the unit's lift-up hood make lens changes and cleaning extremely simple.

The ABR-400 Reader/Filler is ideal for all 16mm jacket applications.

BELL & HOWELL

ABR-400
Jacket Reader / Filler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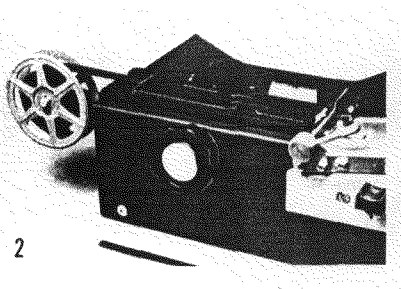
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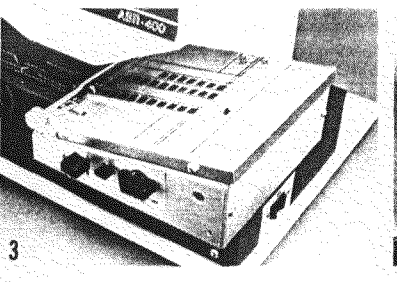

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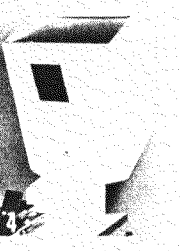

4

Features

1. **Brilliant 11-1/2" x 12" non-glare screen.**
   A 20X or 30X lens provides image enlargement for 100% image verification before insertion into jackets. Clearly shown cutting blade adds to accuracy of jacket filling.
2. **Film inserter and cutting knob**
   Provides for rapid scan of images for accurate verification and alignment. Automatically cycles through film cutting and either chamber advance or return.
3. **Jacket carrier**
   Automatically registers the jacket in precise relation to the film track for positive and rapid film insertion. A special waste film station quickly disposes of unwanted film for faster operation.
4. **Lift-up hood**
   Provides easy access for lens cleaning and changing.

Specifications

Screen:
11-1/2" x 12" (29.1 cm x 30.0 cm) blue, non-glare, neutral density.

Film:
Conventional 16mm thick (5.5 mils) to thin (2.5 mils) microfilm.

Projection System:
Fan-cooled quartz-halogen lamp, 21 volt, 150 watt.

Focus:
Operator controlled.

Magnification:
20X or 30X interchangeable lens. Two position (high/low) switch.

Loading Guide:
A quick visual guide for loading a variety of jacket formats.

Electrical Requirement:
115 volts, 50/60 cycles, 1.5 amps.

Dimensions:
16-1/2"L x 15-3/8"W x 26-3/16"H (41.8 cm x 39.1 cm x 66.5 cm)

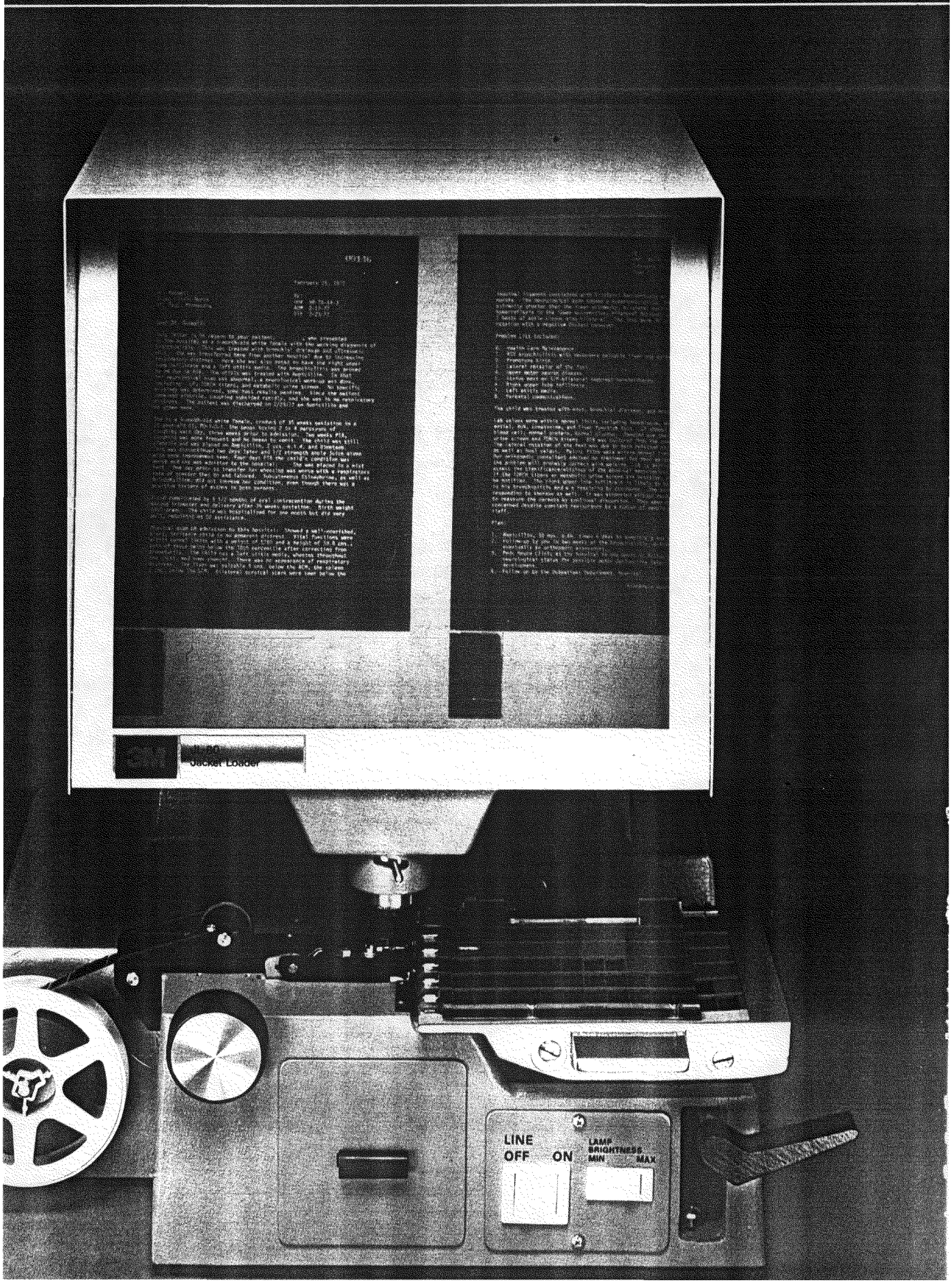
Work Area:
21" x 27" (53.3 cm x 68.5 cm)

Weight: 60 lbs. (27.2 Kgs)

BELL & HOWELL
MICROIMAGERY DIVISION
230 BARMAC DRIVE, WESTON, ONTARIO M9L 2X5

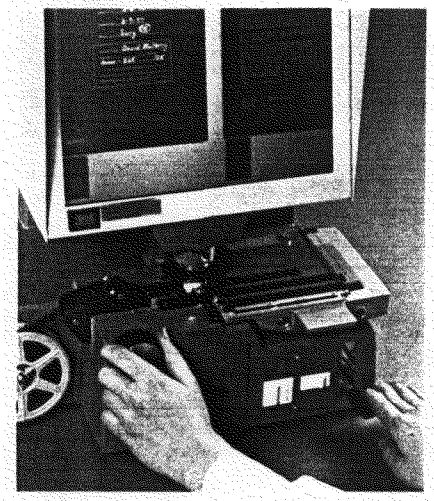
30 ket Loader

3M

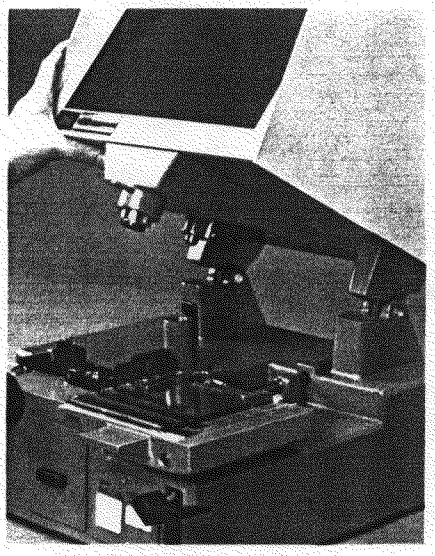


JL 80 Jacket Loader

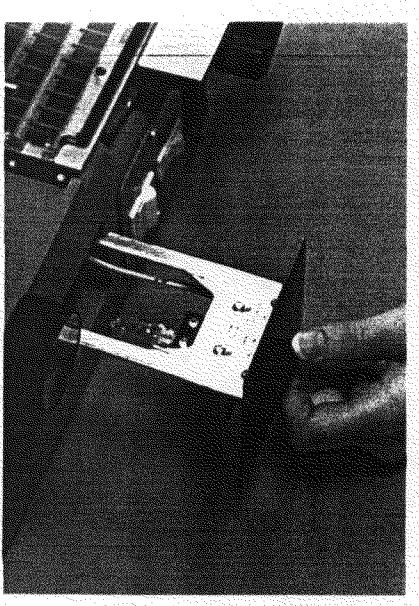
The 3M JL 80 Jacket Loader facilitates the insertion of 16mm roll microfilm into 3M Microfilm Jackets. The easy jacket placement and precise cutting alignment provide speed and accuracy in both conversion and update phases. The functional design permits an operator to make approximately 700 strip film insertions an hour, and 235 single image insertions an hour when updating. The large viewing screen displays excellent image resolution and luminance allowing 100% verification of all images.



Precise, easy loading. Jackets are easily and accurately placed on the platen by positioning the jacket locating holes over the platen locating pins. The pressure plate securely holds the jacket in place, and the movable platen facilitates easy alignment of the jacket channels with the film path. Images are precisely aligned to the left edge of the viewing screen for cutting, and the cut is actuated by depressing the cutter lever.



Human engineered. The 3M JL 80 Jacket Loader is functionally designed to provide convenient location of controls and a viewing screen angled for non-fatiguing operation. The hood and viewing screen assembly is hinged to allow easy access to the platen area for cleaning and maintenance. Image focusing is simply controlled by a focus lever on the front of the lens.



Clear, distinct images. The optics system and Quartz/Halogen lamp of the JL 80 project sharp, high resolution images on the viewing screen. The lamp has two brightness settings for a choice of screen luminance, and is located in a pull-out lamp drawer for rapid replacement.

Typical Machine Characteristics

Screen size: 9" x 10" (228.6mm x 254.0mm)

Magnification: 15X with operator controlled focus

Light source: Quartz/Halogen 12V 50W

Dimensions: 14½"w, 15"d, 19"h (368.3mm x 381.0mm x 482.6mm)

Weight: 40 lbs. (18.14Kgs)

Electrical requirements: 115 volts, 2 amps, 50/60Hz

Heat dissipation: 392 BTU/hr.; 92 Kcal/sec.

Film accommodated: 16mm, 0.005 to 0.0065mm

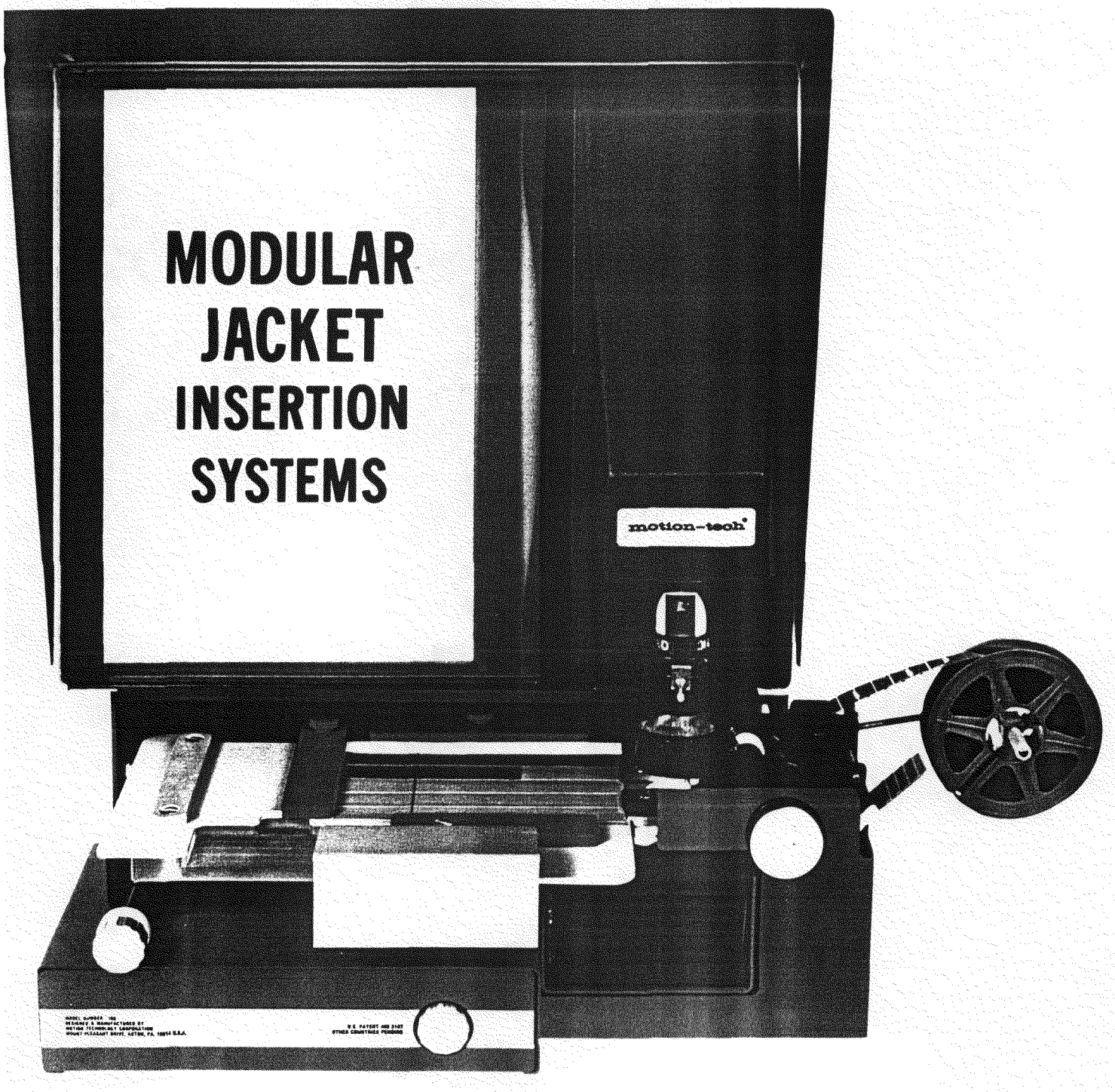
Jackets accommodated: All standard 16mm, 3 to 5 channels

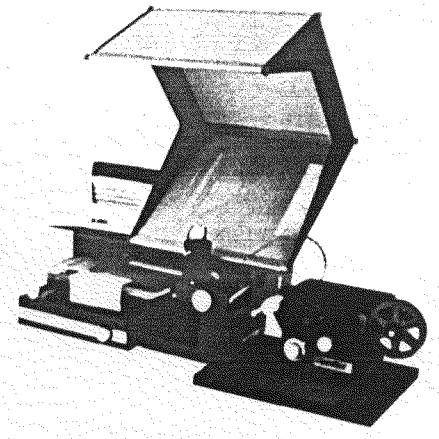
78-1757-7515-0 (412) JR

Litho in U.S.A. with 3M BRAND Photo Offset Plates, Film and Chemicals.

Micrographic Products Division/3M
220-9E 3M Center
St. Paul, Minnesota 55144

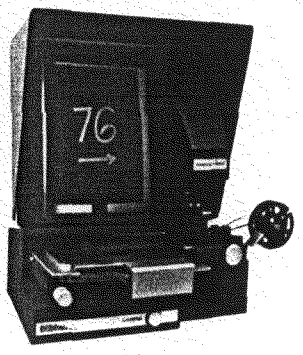
MODULAR JACKET INSERTION SYSTEMS





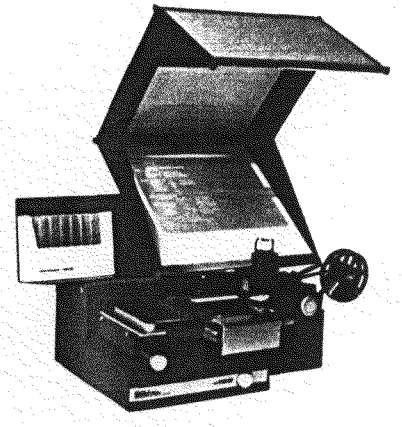
COMJAC® - SYSTEMS — 16 ➡ 11mm

With the most effective image placement characteristics resulting in grid compatibility with outputs from step and repeat cameras. 16 mm film is trimmed to 11mm for insertion into seven channel jackets conforming to ISO, NMA, and MIL fiche standards for Comic Mode insertion in Chronological, Numerical or Edited Modes.



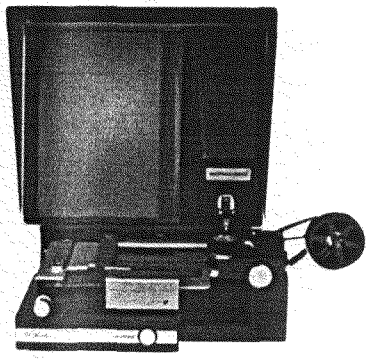
MR/MX - SYSTEMS — 16 mm, 35 mm, 16/35 mm

A most flexible system for "DYNAMIC" office application COMIC (e.g. - correspondence files; and CINE (e.g. - computer print-outs) MODES. Insertion modes can be combined in one inserter. These systems take into consideration both FIRST GENERATION and SECOND GENERATION MODES photographic films.



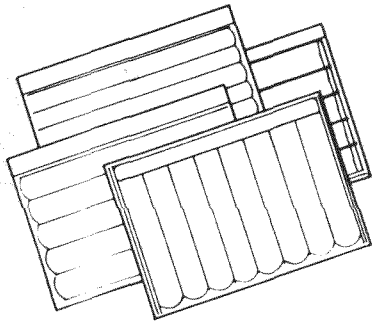
GR/GX - SYSTEMS — 8 mm

Originally custom developed for 8 mm film protection these systems can be applied where 16 mm duplex filming occurs, thereafter slitting to 8 mm for insertion.



A/MA - SYSTEMS — 16 mm, 35 mm, 16/35 mm

For 16 mm COMIC MODE for existing "STATIC" Numerical insertion systems. Jackets are available in all popular sizes on the market today for 16 mm film, 35 mm and combination 35/16 mm jackets.



CUSTOM PRODUCTS/ACCESSORIES

MOTION-TECH manufactures the widest selection of UPDATABLE MASTER FICHE JACKETS available on the market for "OPEN" and "CLOSED" information systems indexing. Motion-Tech's design and production capabilities include a variety of notching tools and accessories for camera modifications. Total flexibility adapts readily to users' specific needs.

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