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IICA-CIDIA

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

CENTER FOR DOCUMENTATION
& AGRICULTURAL INFORMATION

SAN JOSE, COSTA RICA

SURVEY REPORT

November 8, 1976

R. Wood
Xerox Commercial
Microsystems

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Mission

IICA-CIDIA's principal function is to develop and strengthen the agricultural information functions of IICA members, individually, regionally, and worldwide. Its mission is accomplished by working at both the macro and micro levels, so that increased bibliographic and information skills are effected at all levels. Through its active assistance, the national agricultural libraries are encouraged and developed, national agricultural information networking aided, and individual unit skills increased. Results are obtained through the identification of current and potential agricultural information resources, close working relationships with national ministries and information centers, on site evaluation and training, in depth education and training at IICA-CIDIA facilities at Turrialba, Costa Rica, and the establishment and fostering of intercountry pooling and exchange of information.

Geographical Coverage

IICA-CIDIA presently serves twenty-two individual countries in Latin America and the Caribbean. IICA itself has four regional offices and local offices in its member states. Regional offices are located in Peru, Guatemala, Uruguay, and the Dominican Republic.

Data Resources

IICA-CIDIA has published since 1972 the Indice Agricola de America Latina y el Caribe (Latin American and Caribbean Agricultural Index). The index, was previously published by AIBDA (Associacion Interamericana de Bibliotecarios y Documentalistas Agricolas). The AIBDA has subsequently maintained itself solely as a professional organization of libraries and documentalists.

AGRINTER, the Inter-American System for the Agricultural Sciences, provides a coordinated structure of agricultural information and documentation on a national and Inter-American level. It provides for formalization and standardization in the collection, processing, and dissemination of agricultural information. Access is available to both institutitons and individuals. Its scope includes documents published in South and Central America, Mexico and the Caribbean, as well as those published elsewhere, but relating to the region.

AGRINTER, by design, accommodates national interests and although Spanish is the official system language, it permits Dutch, Portuguese, and English inputs.

In theory each country, through its national coordination center, is responsible for its own input. In practice, however, IICA-CIDIA is performing some or all of the input functions for some countries through bilateral agreements, where no adequate country infrastructure exists.

The planned services of AGRINTER are:

*- Agricultural Bibliography of Latin America and the Caribbean

*- Bibliographies on special topics of interest to the region

- Union Catalogs of Agricultural Publications (Initial phase: serial publications)

*- Exchange of bibliographies

*- Document reproduction

- Generation of magnetic tapes

- Selective dissemination of information

- Research in progress

- Telecommunication services

- Annotated bibliographies

- Literature reviews

- Translations

The Indice Agricola, which is a by-product of CIDIA's AGRINTER Program, is published quarterly and consists of a Subject Index, a Keyword Title Index (KWIC - Keyword In Context), and an Author Index. The KWIC Title and Author Index are generated via computer line printers. The Subject Index with full citations is produced manually. The number of documents covered annually has shown substantial growth:

Volume 1 - Volume 9 (1966 - 1974)	31,864
Volume 10 (1975)	8,330
Volume 11 (1976)	13,000
Volume 12 (1977 - Projected)	20,000

The annual volume of documents is not expected to rise beyond 30,000 because of applied quality standards. The "Indice Agricola" is distributed to:

125 Universities	60 Depository Libraries
200 Experimental Stations	500 Individuals

*Operational

No automated data base, per se, currently exists. Only the author and title are put into the computer through tab cards. Titles for the KWIC Index are enriched through a controlled vocabulary.

Documents from the participating countries which accompany the AGRINTER input form 50 - 75% of the time, are housed at the IICA-CIDIA library in Turrialba. The collection presently consists of about 70,000 books and 3,000 serials. The library has approximately 2,000 bibliographies for reference. As part of IICA-CIDIA's outreach program, the 500 bibliographies researched and produced by the library staff over the last five years were duplicated and disseminated to ten selected research centers throughout Latin America.

Entries in the "Indice Agricola" indicate document location and requestors are asked to write directly to the holding institution for copies (supplied usually on a fee basis). The Turrialba library does produce xerographic copies on request, at 10¢ a page. Approximately 150,000 pages were photocopied at Turrialba in 1975. Unless orders are accompanied by check, pro-forma invoices are sent which adds considerable delay in fulfilling requests. (1)

IICA-CIDA has also accepted the responsibility for inputting on a regional basis for Latin America, agricultural information to AGRIS, the International Information System for the Agricultural Sciences and Technology (coordinated by FAO). AGRIS data is collected and processed in Vienna, Austria. IICA-CIDIA will maintain AGRINTER independently and spin off AGRIS data as required. This is because the AGRIS carrier language is English and AGRINTER will maintain its Spanish language identity and secondly because of AGRIS standards only 80 to 85% of the total AGRINTER input is accepted for AGRIS.

IICA-CIDIA accomplishments to date include:

- Integration and Translation of AGRIS/AGRINTER Manuals
- Translation of AGRIS Subject Classifications
- Enrichment of the AGRIS analytical Index
- Reworked AGRIS Input Sheets for both AGRIS and AGRINTER
- Established Guidelines for Title Enrichment
- Produced Guidelines for Title Enrichment
- Developed a Thesaurus of Approximately 7,000 Key Terms
- Development of a List of Serials in Latin America
- Created a List of Corporate Entries
- Developed Equivalency Classification Tables for AGRIS and Dewey Published in both English and Spanish
- Trained Documentalists in the AGRINTER System Within Member Countries and at IICA-CIDIA

(1) For further information on document reproduction, see page 10.

- Prepared Test Magnetic Tapes for AGRIS Input
- Obtained Programming Knowledge and Experience with AGRIS in Vienna and Rome
- Produced OCR AGRIS Input on an Experimental Basis Beginning in January 1976

Budget

No IICA-CIDIA comparative budget figures exist as various functions have been reassigned with relocation to San Jose, e.g. the printing and book publishing functions are now independent. Funds are allocated by IICA according to programs, projects, and activities, so that no formalized budget for CIDIA has been established. But it is estimated that CIDIA annual expenditures range from $300,000 to $350,000.

Recent external assistance has consisted of a three year $250,000 grant by the IDRC to underwrite the development of the AGRINTER/AGRIS information system. This grant expires in 1977. To date these resources have gone mainly in support of staff personnel: a computer specialist, two documentalists, and an information and documentation specialist. The IDRC grant allocated funds for 150 computer hours at the projected rate of $100/hour.

The Netherlands government has provided additional external support for specific projects, e.g. library book purchases and microfiche equipment. This funding is estimated at approximately $10,000/year.

The National Agricultural Library, 1974-1975, assigned Mrs. Olga Lendvay to help coordinate and control subject classification in accordance with the AGRIS scheme.

Automation

The International Research Development Centre (IDRC) undertook two studies concerning the computerization of the AGRIS/AGRINTER System at IICA-CIDIA. The first, completed in 1973, recommended the use of punched paper tape input which was not implemented because of the inherent unreliability of punched paper tape systems, as well as potential equipment service problems. The second study, completed in 1975, produced a charter for system implementation, which is currently being followed with but a few modifications.

A computer specialist, Domingo A. Morales, was sent for a four month period to INIS, Vienna, Austria and FAO, Rome, Italy to become thoroughly familiar with the AGRIS System. Mr. Morales, an industrial engineer by education, has had five years experience at the University of San Jose in systems design and programming.

Computerization of the AGRINTER System is desired in order to:

- Impact currently lengthy manual processing time
- Provide for AGRIS input
- Handle more efficiently the increasing volume of document input
- Offer selective search and retrieval
- Enable IICA-CIDIA to receive and process other automated data bases
- Encourage data tape input and output to and from national centers

IICA-CIDIA's current objectives, however, appear limited to:

- Implementing AGRIS input
- Automating "Indice Agricola" production

IICA-CIDIA has access to a total of four data processing centers in Costa Rica, of which only two are practical alternatives: SEDCA (a United Fruit Subsidiary) and the University of Costa Rica at San Jose.

(1) IICA-CIDI (1)

1. Computer: IBM 1130
   Core memory: 8,000

2. Monitor Disk IBM 2315 (512.00 bytes)

3. Card Reader: IBM 1442 (300 C.P.M.)

4. Printer: IBM 1132 (120 lines/min.)

The IBM 1130 is used mainly for scientific research and administrative functions. The IBM 1130 is underpowered for processing bibliographic information. The existing hardware would have to be upgraded with additional disks and tapes. CIDIA would also be limited to the lower level assembler programming language. The 1973 study indicated that a 30% implementation of projected CIDIA tasks would fully engage the 1130.

(2) IBM Data Center

1. Computer: IBM 360/25
   Core memory: 48,000

2. Direct Access Storage Faciltiy: IBM2311
   3 Drives using removable disk packs of capacity of 7-½ million bytes each.

(1) 1975 IDRC Study Report.

3. Magnetic Tapes:
   3 Drives 9 Tracks - 800, 1600 b.p.i.
   1 Drive 7 Tracks - 200, 556, 800 b.p.i.

4. Card Reader: IBM 2540 (1000 c.p.m.)

5. Printer: IBM 1403 (1100 lines/min.)
   Standard Print Train (60 character set), no UCS feature

6. Cost: US $100/hour

7. Operating System: DOS
   Not available for external use.

(3) SEDCA (Sistema Electronico de Datos y Ciencias Administratives)

System I:

1. Computer: IBM 360/30
   Core memory 65,000

2. Direct Access Storage Facility: IBM 2311
   3 Drives using removable disk packs of capacity of 7½ million bytes each

3. Magnetic Tapes:
   3 Drives 9 Tracks - 800 b.p.i.

4. Card Reader: IBM 2540 (1000C.P.M.)

5. Printer: IBM 1403 (1100 lines/min.) model N1, with UCS feature
   Standard RN Print Train (52 char set)

6. Cost: US $95/hour

7. Operating System: DOS

System II:

1. Computer: IBM 360/40
   Core memory: 256,000

2. Direct Access Storage Facility: IBM 2311
   7 Drives using removable disk packs of capacity of 7½ million bytes each (8 drives 2314 end of 1975 planned)

3. Magnetic Tapes:

   4 Drives 9 Tracks - 800 b.p.i.

4. Card Reader: IBM 2540 (1000 c.p.m.)

5. Printer: IBM 1403 (1100 lines/min.) model N1, with UCS feature Standard RN Print Train (52 char. set)

6. Cost: US $95/hour blocktime

7. Operating System OS (MFT, 2 partitions 90,000, 88,000), PL/I(F) presently being used by IICA-CIDIA on an "as available" basis. Only data processing center that has a line printer with an interchangeable print train that will accept the IICA-CIDIA IBM 1416 special character print train.

(4) University of Cost Rica

1. Computer: IBM 360.40 Model GF-40
   Core memory: 196.608 bytes

2. Direct Access Storage Facility: IBM 2314-A
   5 Drives using removable disk packs of 29.17x10 bytes/package

3. Magnetic Tapes 2401-4
   4 Drives 9 Tracks - 800, 1600 b.p.i.

4. Card Reader: IBM 2540 (1000 c.p.m.)

5. Printer IBM 1403 (600 lines/min.) model 2, no. UCS, no exchangeable print chain

6. Operating System DOS and OS (PCP, 170,000 partition) PL/I (F), but planning to convert totally to OS

Most IICA-CIDIA data processing and testing is performed at the University data center. IBM loaned at no cost the 360/40 to the University and this arrangement may be terminated. IICA-CIDIA's use of the data center is tolerated and not encouraged because of other University priorities, but continued use does not appear immediately threatened.

Implementation per the IDRC recommendations is being pursued, although somewhat behind schedule. Accomplishments to date include:

- Equipment Purchase:

  IBM 29 keypunch machine with interpretation ($7000)

IBM 1416 special character print train - upper and lower case ($4000) (In Spain for repair the past six months)

Magnetic Tape and Disk Pack ($2000)

- Training
- Development and testing of AGRINTER Programs (Vol. 10 of the "Indice Agricola" was digitized and transferred experimentally and successfully to AGRIS)

It would appear that IICA-CIDIA is approximately a year out of phase in its implementation schedule. Current programming efforts center on successfully translating via the computer Spanish (the AGRINTER carrier language) into English (the AGRIS carrier language) specific data fields. For example, certain bibliographic notes are relatively standard - e.g., graphs, charts, etc. IICA-CIDIA, via a computerized table, is seeking to translate these notes automatically. City and country names would be handled similarly. Title information, which cannot be translated automatically, will continue to be input in both English and Spanish after manual translation.

IICA-CIDIA believes it will be able to initiate AGRIS magnetic tape submission by March 1977.

The next scheduled programming activity is to fully convert the "Indice Agricola" to computer production. This is projected for September 1977 completion. At this point IICA-CIDIA does not plan to use photocomposition but rather computer printout and a cut and paste process.

Beyond these two specific objectives, no longer term IICA-CIDIA strategy has been initiated for either the acquisition and use of other information data bases, or for extending intercommunication with other data centers in Latin America.

The IICA supported Institute for Land Reform (INCURA) in Bogota, Colombia has produced a union catalog via the computer. This is mainly a catalog production function and is not intended for selective searching or retrieval.

Optical Character Recognition

At AGRIS' request, IICA-CIDIA experimented with Optical Character Recognition (OCR) input beginning in January 1976 at the rate of 500 documents monthly. The OCR sheets were batched for quarterly AGRIS input. AGRIS supplied IICA-CIDIA with the proper paper stock becuase local paper of sufficient quality was not available. An alternative paper source may have been located in Guatemala, but it is not known if AGRIS will continue the test program. Two IBM Selectric Typewriters with OCR elements are used for input.

Brazil submitted paper tape AGRIS input until six months ago. It planned to submit magnetic tapes beginning in August, but at last report had not yet done so. If Brazil succeeds inputting directly into AGRIS via magnetic tape, it is reasonable to expect that other more advanced Latin American countries will be able to do so also in the near future. Brazil took the initiative because of CIDIA delays but CIDIA does not believe it will weaken its mission as their main function is the support of AGRINTER which is a regional information system.

IICA-CIDIA/AID-TAB ADP Compatibility

There are no IICA-CIDIA plans for or expressed interest in the MARC or MARCAL communication formats. This is probably due to a pre-occupation with AGRIS and the "state of the art" both at IICA-CIDIA and its member countries. Until institutions in the member countries acquire automated data processing capabilities, communication compatibility is a premature question. It is not a question that has been seriously addressed by CIDIA members.

The AID/TAB data can be communicated either in the MARC or AGRIS formats. IICA-CIDIA's program language is PL1 plus assembler. Its computer operating system is O/S. Tapes should be transmitted in the 800 b.p.i. format. CIDIA would prefer to receive them in the AGRIS format (specifications attached in Appendix). Programs now exist with the AID/TAB contractor to translate the AID/TAB tapes into the MARC format, but not into the AGRIS format. The National Agricultural Library indicated that programs exist to translate AGRIS into the MARC format. To prepare a translation program to go directly from the AID/TAB tape format to the AGRIS format would require an estimated three man months of effort.

While it is apparent that data communication can be effected, no programs exist at IICA-CIDIA for the manipulation of the data for selective searching and retrieval. The CIDIA computer specialist, Mr. Morales, asserted that packaged programs potentially exist in Vienna, Austria for SDI searching and retrieval which could be run at IICA-CIDIA. Information on these programs have been requested from Vienna (INNIS).

To supply IICA-CIDIA with documented software for off-line searching and retrieval, if the AGRIS-IRMS programs are not appropriate, approximately 6 man months of programming and 50 hours of testing would be required.

Beyond the technical problems, because IICA-CIDIA has not conceptualized or strategized its role in data management, its total software requirements cannot yet be defined.

In addition, IICA-CIDIA has no allocated funds to provide any SDI services, for either internal or external use.

Staff personnel are inadequate for any greatly expanded activities based upon current commitments.

Microfiche Equipment

The Netherlands government donated to IICA-CIDIA a Dagmar PM Mark III Microfiche Camera. The camera is not available in the United States.

The PM Mark III is a multiple format, variable reduction, sheet film microfiche camera.

To date IICA-CIDIA has not produced any microfiche. Film has to be developed in a series of three tanks. Better processing units are available from Cordell and range in cost from $1,500 to $6,000. Specifications on both the Cordell processors and the PM Mark III are found in Appendix G.

CIDIA expressed concern about ease of use, service, and image quality of the PM Mark III Camera. Xerox microfilm technicians indicate that the film quality should be adequate and that the machine operation should not be difficult. Machine service and part replacement could be a problem in Costa Rica. Service could be clarified only by a survey of manufacturers and the support levels available in Costa Rica. A turnkey package of parts and supplies coupled with key operator training may offer the best practical solution at this time.

A 105mm microfiche roll film camera could offer some production advantages over a sheet fed camera, depending upon production volumes. Local film processing via Kodak, might also be available, thus eliminating the processing problem entirely.

Training in microfilming and film processing and perhaps service, would be desirable before production is begun.

CIDIA also has available a 3M 400 Reader Printer, which is not being currently used. Specifications are attached in Appendix G. A "wet process," the reader printer provides serviceable hardcopies at the rate of 8 sec./copy.

Development Programs

IICA-CIDIA does not wish to be merely a collector of information or a data input center. It wishes also to create, distribute, and disseminate information. Its immediate focus is on implementing its current automation programs. They view their near term efforts as being directed to educating and training potential AGRINTER users, beyond librarians and documentalists,

thereby raising the overall knowledge and skill levels of the information user. They view their efforts as a subset or subsystem of CONACYT (National Council of Science an Technology), and non-competitive.

CIDIA does not intend to create a retrospective AGRINTER data base. Nor have any specific plans been made to acquire any external data bases. Potential acquisition candidates identified by CIDIA are: AGRIS, CAIN, ASIS, ISIS, and CANADIAN CAIN.

CIDIA expressed interest in acquiring AID/TAB tapes and believed that IICA would find it most useful for their own research. The AID/TAB developmental literature data base might serve as a model in all of its elements, CIDIA indicated, for a Latin American equivalent at CIDIA. For example, it was felt that each of the IICA national offices was a potential source of developmental literature. CIDIA would be anticipating in a way an operational DEVSIS. Its concept of a developmental literature center for Latin America, is not yet well formed, but the desire was expressed to open a dialogue with AID/TAB for its consideration.

If added funds were available, CIDIA listed a variety of non-ranked interests:

- Added professional and clerical staff for greater responsiveness.
- Staff and funds for an active microfiche program.
- A computer programming assistant.
- An assistant librarian for the Turrialba Library.
- A planning and development manager that could conceptualize and coordinate CIDIA growth.
- Special project managers - e.g., to develop an information program dealing with the humid tropics.
- Abstracting funds to increase document access and selectivity.

Conclusion

IICA-CIDIA has initiated an ambitious and most valuable agricultural information program. Frequently, no information policy existed at the national level of a member state and IICA-CIDIA has worked against considerable obstacles. Its achievements have been real and substantial.

While a functional information system now exists, IICA-CIDIA is behind in its automation goals.

The effort being directed toward machine translation seems misplaced. Manual translation may well be more easily implemented and perhaps at less cost.

The use of line printers for catalog production should be reconsidered. Photocomposition would require fewer printed pages and give an improved product appearance. If no photocomposition facilities exist in Costa Rica, which is probable, magnetic tapes could be sent via air freight to a U. S. commercial vendor for production, with little loss in turnaround.

If IICA-CIDIA could upgrade its present computer facilities, it would aid CIDIA in its development programs. But there are no near term plans for upgrading.

Automated information resources in Latin America and the Caribbean, according to IICA-CIDIA, are sparse and still in very formative stages. Consequently, no clear program exists or is contemplated at IICA-CIDIA for either the receipt or dissemination of information in an automated form - i.e., magnetic tapes or via terminals. If this becomes practical, Brazil, Venezuela, Colombia, Argentina and Mexico would probably be the first to use such services as these are the most advanced countries from an automation standpoint. Although no specifics are known, it is understood that Brazil and Colombia have done some sophisticated work with keyword indexes. Brazil, at this point, appears to be close to having the ability to provide direct AGRINTER input via magnetic tapes, thereby anticipating IICA-CIDIA's system implementation.

On line exchange of information between IICA-CIDIA and country users does not seem relevant, given the present level of mutual development. Exchange of magnetic tapes for local use appears the most practical and economic option. From IICA-CIDIA's perspective, any use of other tapes has lower priority until their current objectives are realized.

IICA-CIDIA, while earnestly seeking to expand its information programs, lacks any clear solid concept of its future development. Even given increased and/or greater ADP capacity and ability, CIDIA has not effected any growth plans.

This survey, by design, did not assess CIDIA effectiveness to its member states. The AID/ROCAP representative at IICA-CIDIA, however, was critical of CIDIA's limited view of information, which CIDIA viewed in traditional bibliographic terms.

AID/ROCAP was also critical of CIDIA's member country effectiveness, but no substantiation of this could be obtained. While visible progress has been made, CIDIA must be more aggressive in defining its goals and in soliciting support to achieve them.

A positive action step for consideration would be the organization of a project management task force to assist in the development of a rational growth plan. This could take the form of a phased effort which would include the establishment of a valid objective and mission work statement; an in-depth survey and evaluation of user technology levels and anticipated development; applicability and feasibility of external data base acquisitions; a determination of financial, manpower, and equipment levels required to support planned development. These steps would then provide a basis for a sound evaluation on both IICA-CIDIA's future role in information management and possible alternatives in Latin America.

ACRONYMS

AGRINTER	Inter-American Information System for the Agricultural Sciences
AGRIS	International Information System for the Agricultural Sciences and Technology (coordinated by FAO)
IICA-CIDIA	Inter-American Institute of Agricultural Sciences/Center for Documentation & Agricultural Information
AIBDA	Associacion Interamericana de Bibliotecarios y Documentalistas Agricolas
CONACYT	National Council of Science & Technology (Mexico)
DEVSIS	A Development Science Information System
FAO	Food and Agriculture Organisation of the United Nations
IDRC	International Development Research Centre (Canada)
INIS	International Nuclear Information System (coordinated by IAEA)
KWIC	Keyword in Context
KWOC	Keyword Out of Context
MARC	Machine-readable Cataloging (Library of Congress)
MARCAL	MARC for Latin America
OCR	Optical Character Recognition
SDI	Selective Dissemination of Information

IICA-CIDIA

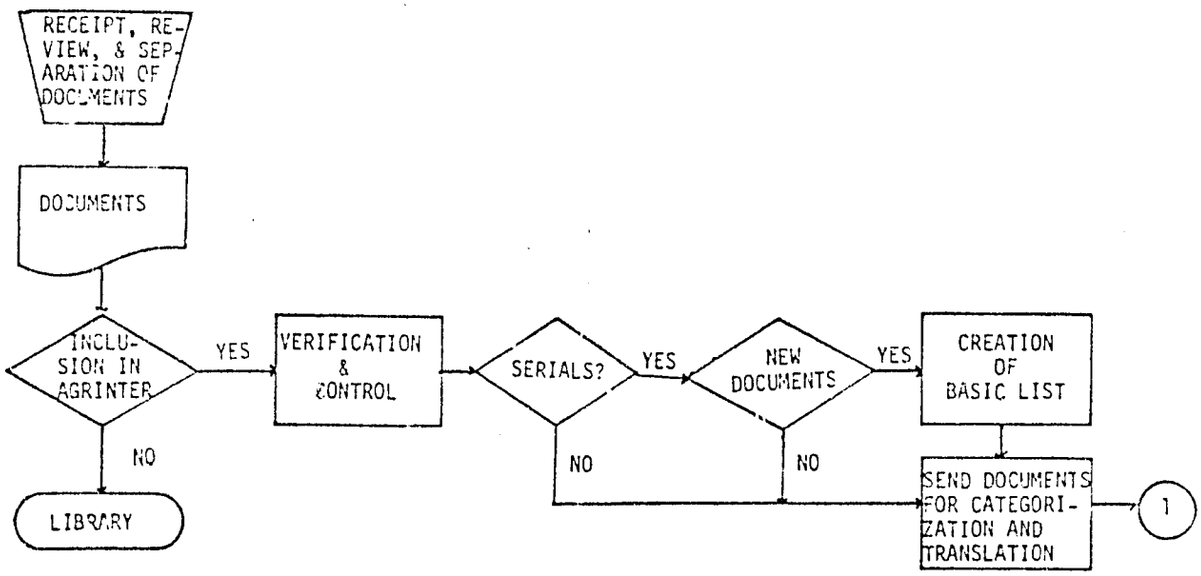
List of Personnel

Maria Dolores Malugani	Director
Hugo Caceres Ramos	Chief, Information and Documentation Unit
Orlando Arboleda	Specialist, Information and Documentation and Training
Maria Jose Galrao	Specialist, Information and Documentation
Humberto Jimenez	Documentalist
Domingo A. Morales	Computer Specialist
Julia Ines Rodriguez	Documentalist
G. Alfredo Alvear	Librarian
Ghislaine Poitevien	Librarian
Carmen Villegas	Documentalist for the Tropics
Finn Damtoft	Specialist, Information and Documentation

Appendix C.

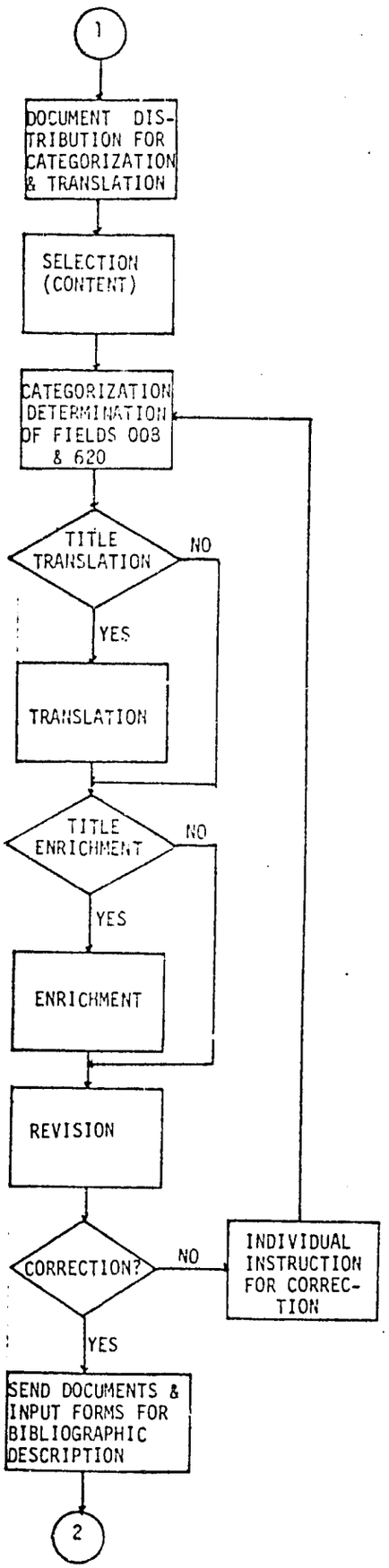
AGRINTER Flow Chart

I. IDENTIFICATION & REGISTRATION

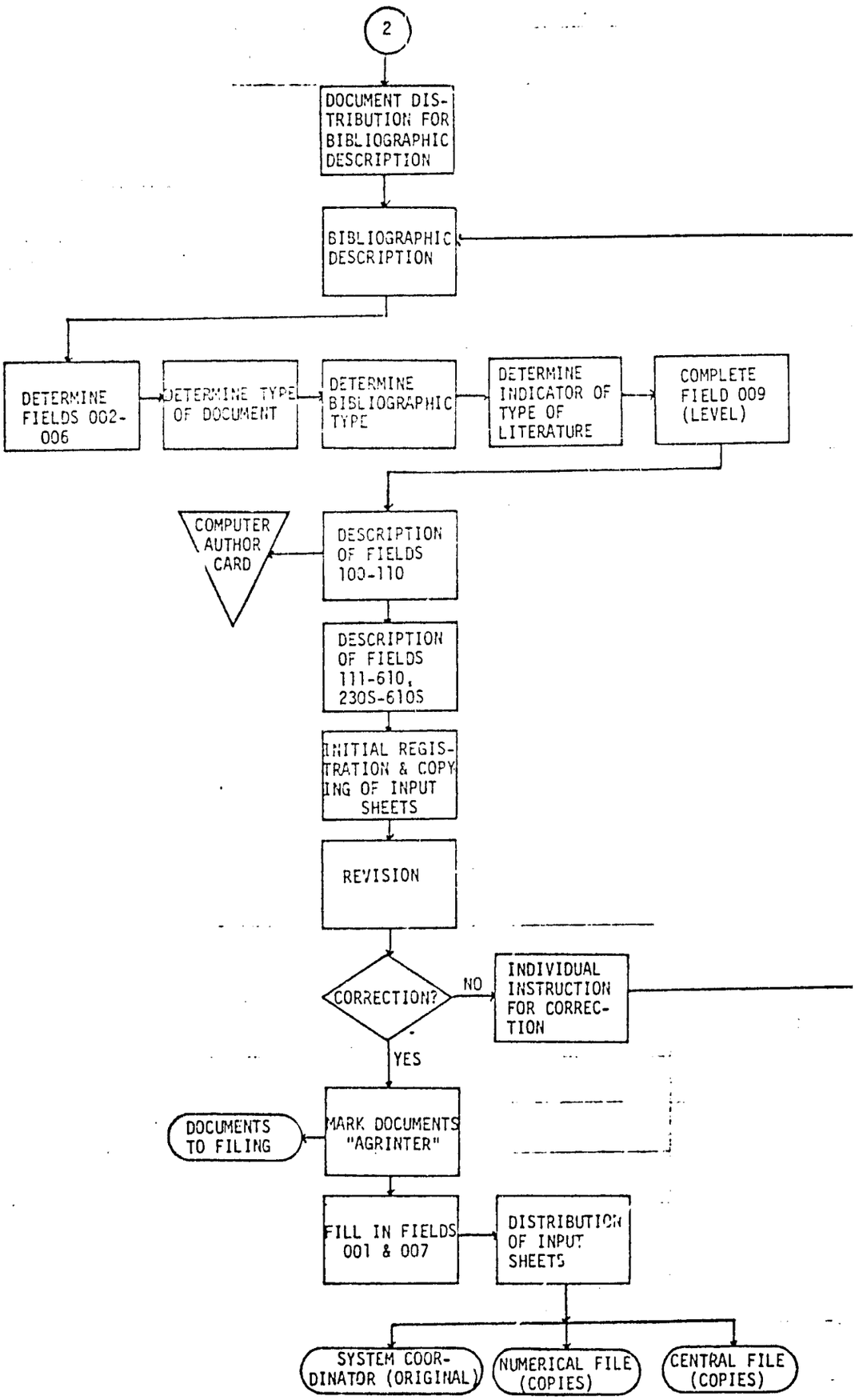


AGRINTER FLOWCHART

II. CATEGORIZATION & TRANSLATION



III. BIBLIOGRAPHIC DESCRIPTION



Appendix D.

AGRINTER Input Sheet

AGRINTER

HOJA DE ENTRADA

000 AGRINTER/AGRIS

001 C. I. | Año 7 | No. consecutivo — NTR

002 No. de la hoja / No. total de hojas

003 Revisión R | Eliminación W — Cambio

004 Nuevo N | Cambiado C | Eliminado D — Status del registro

005 NR afectado

006 Traducción T | Geográfica

007 NR relacionado (NTR)

008 (Principal) (Secundaria) CATEGORIAS DE MATERIA

TIPO DE DOCUMENTO: Monografía B | Estándar C | Dibujo D | Película F | Mapa o Atlas G | Disco H | Artículo J | Patente P | Informe R | Fuente de Compras T

NIVEL BIBLIOGR.: Analítico A | Monográfico M | Publ. seriada S | Colectivo C

INDICADOR DEL TIPO DE LITERATURA: Conferencia K | Diccionario L | Cartas Numéricas N | Tesis o Diser. U | Legislación W | Bibliografía Z | Mapa(s) Y | Documento E | No convencional V

1

009 NIVEL

(Utilice una hoja de entrada para cada nivel bibliográfico señalado y llene la casilla 009 con la letra pertinente. Para publicaciones seriadas use la sección 2 de esta hoja de entrada)

		Tag	Datos (Use siempre máquina de escribir)
Autor(es) personal(es) (Institución donde trabaja)		100	
Autor(es) Corporativo(s)		110	
Grado académico		111	
Título en Inglés	Título principal	200	
	Elementos secundarios	201	
Conferencia	Nombre	210	
	Lugar	211	
	Fecha	213	
Título Original	Título principal	220	
	Elementos secundarios	221	
Edición		250	
No. Informe/Patente		260	
Números adicionales		310	
ISBN/IPC		320	
Pie de Imprenta	Lugar de publicación	401	
	Casa edit.	402	
	Fecha publ.	403	
Colación		500	
Idioma del texto		600	
Notas		610	
Cod. de Objetos y Geogr.		620	/ G : G

2

009 NIVEL S

Título de la publ. seriada	Título principal	230	
	Elementos secundarios	231	
ISSN		320	
Fecha publicación		403	
Colación		500	
Notas		610	

Appendix E.

Indice Agricole Sample Pages

00277 MARQUEZ VAZ, J.J.
00441 MARQUEZ, H.
01011 MARROQUIN ARENALD, H.A.
02514 MARRUFFO, B.R.
01778 MARSICO, O.
01780 MARSICO, O.J.V.
01800 MARSICO, O.J.V.
01779 MARSICO, O.V.
02461 MARS, M.
01658 MARTINEZ ARMAS, S.L.
01716 MARTINEZ A, J.
02113 MARTINEZ CASTRO, L.F.
00344 MARTINEZ DE HERRERA, M.
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AGRIS Magnetic Tape Codes & Character Sets

AGRIS

International Information System for the Agricultural Sciences and Technology

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Sistema de Información Internacional sobre Ciencias y Tecnología Agrícolas

FAO/AGRIS 8 (Rev.0)

Dec. 1973

A G R I S : MAGNETIC TAPE CODES and CHARACTER SETS

AGRIS Coordinating Centre
Centre de Coordination AGRIS
Centre de Coordinación AGRIS

WS/E5678

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PREFACE

This report contains the AGRIS character set and the corresponding codes for magnetic tape for use in conjunction with

AGRIS: Magnetic tape specifications and record format. FAO/AGRIS 7 (Rev.0)

The AGRIS 8-bit code is based on the ISO standard 7-bit code (ISO 646 1973) for information interchange.

1. AGRIS CHARACTER SET

1.1 The AGRIS character set consists of the following 84 symbols:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 0

. , : ; / = + - $ % # > < [ ] ( ) ! ?

' (apostrophe) " (quotation marks) SP (space)

Each of these characters will be represented on the AGRIS tapes by a unique bit configuration (see Section 2 "AGRIS 8-bit code"), and it will be possible to utilize all of them in the printing of AGRINDEX.

2. AGRIS 8-BIT CODE

2.1 Description

The AGRIS 8-bit code shown in Table 1 is based on the ISO 7-bit code for information interchange (ISO 646 1973). It consists of a set of 128 configurations. In all cases the 8th bit is set to zero ($b_8 = 0$).

Empty positions in columns 0-7 indicate graphics or control characters in the standard which will not be used by AGRIS. No other characters have been substituted in these positions.

Note that any undefined bit configuration present in AGRIS input tapes will be replaced by space (SP) in the AGRIS output tape.

2.2 Implementation of the AGRIS 8-bit code on 9-track NRZI magnetic tape

The figure below shows the correspondence between magnetic tape track number and AGRIS 8-bit code bit number. Bit P is the odd-parity bit.

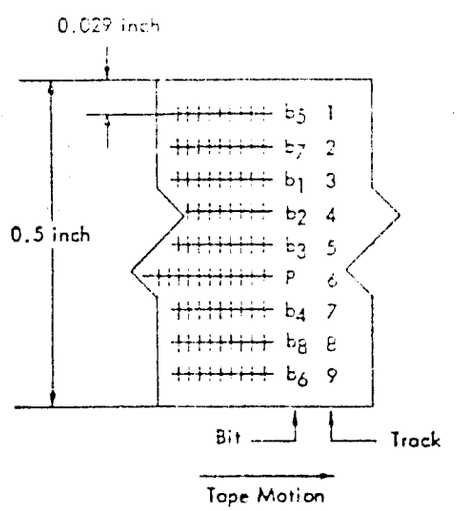


TABLE 1. AGRIS 8-BIT CODE

								b_8	0	0	0	0	0	0	0	0
								b_7	0	0	0	0	1	1	1	1
								b_6	0	0	1	1	0	0	1	1
								b_5	0	1	0	1	0	1	0	1
b_8	b_7	b_6	b_5	b_4	b_3	b_2	b_1	Row \ Column	0	1	2	3	4	5	6	7
				0	0	0	0	0			SP	0		P		p
				0	0	0	1	1			!	1	A	Q	a	q
				0	0	1	0	2			"	2	B	R	b	r
				0	0	1	1	3				3	C	S	c	s
				0	1	0	0	4			$	4	D	T	d	t
				0	1	0	1	5			%	5	E	U	e	u
				0	1	1	0	6				6	F	V	f	v
				0	1	1	1	7			'	7	G	W	g	w
				1	0	0	0	8			(	8	H	X	h	x
				1	0	0	1	9			)	9	I	Y	i	y
				1	0	1	0	10			*	:	J	Z	j	z
				1	0	1	1	11			+	;	K	[	k	
				1	1	0	0	12			,	<	L		l	
				1	1	0	1	13		GS	-	=	M	]	m	
				1	1	1	0	14		RS	.	>	N		n	
				1	1	1	1	15			/	?	O		o	

ISO 7-bit code

TABLE 2. GRAPHIC AND CONTROL CHARACTERS

1. Graphic characters

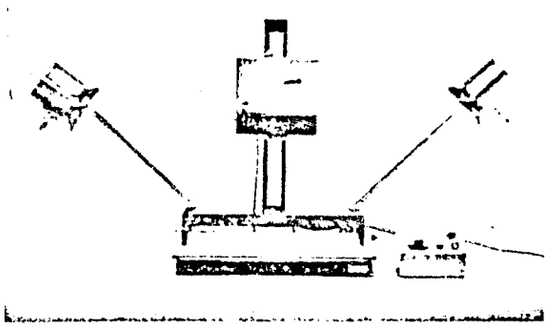
Graphic	Name	Position in the code table
(space)	Space	2/0
!	Exclamation mark	2/1
"	Quotation mark	2/2
$	Dollar sign	2/4
%	Percent sign	2/5
'	Apostrophe	2/7
(	Left parenthesis	2/8
)	Right parenthesis	2/9
*	Asterisk	2/10
+	Plus sign	2/11
,	Comma	2/12
-	Hyphen, minus sign	2/13
.	Full stop (period)	2/14
/	Solidus	2/15
:	Colon	3/10
;	Semi-colon	3/11
<	Less than sign	3/12
=	Equals sign	3/13
>	Greater than sign	3/14
?	Question mark	3/15
[	Left square bracket	5/11
]	Right square bracket	5/13

2. Control characters

Abbreviation	Meaning	Position in the Code table
GS	Group separator	1/3
RS	Record separator	1/14

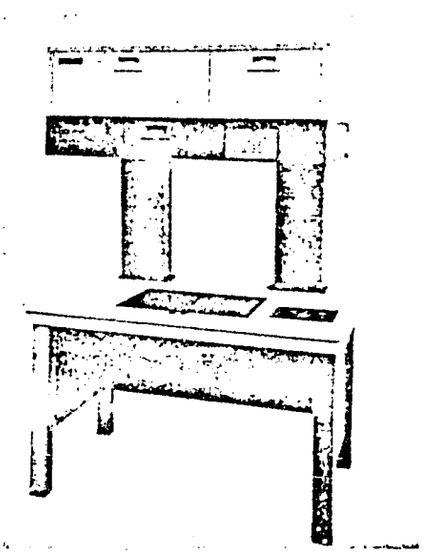
Appendix G

Microfilm Equipment



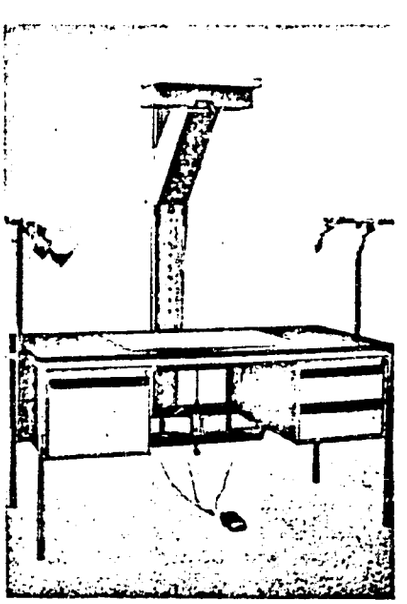
Model Name: Dokumator Dat 16
Type: planetary
Film Size: 16mm roll X 30m
Input: documents and books up to 297mm X 420mm
Reduction: 21.6X
Dimensions: 62.5cm(H) X 95cm(W) X 59cm(D)
Weight: 25 kg.
Indicative Price: not available
Remarks: Utilizes unperforated 16mm document film. Exposure timing by transistor-controlled timer, continuously from 0.2-7.5 secs. Exposure release by hand switch, pedal switch available as an option.

Manufacturer: Carl Zeiss Jena



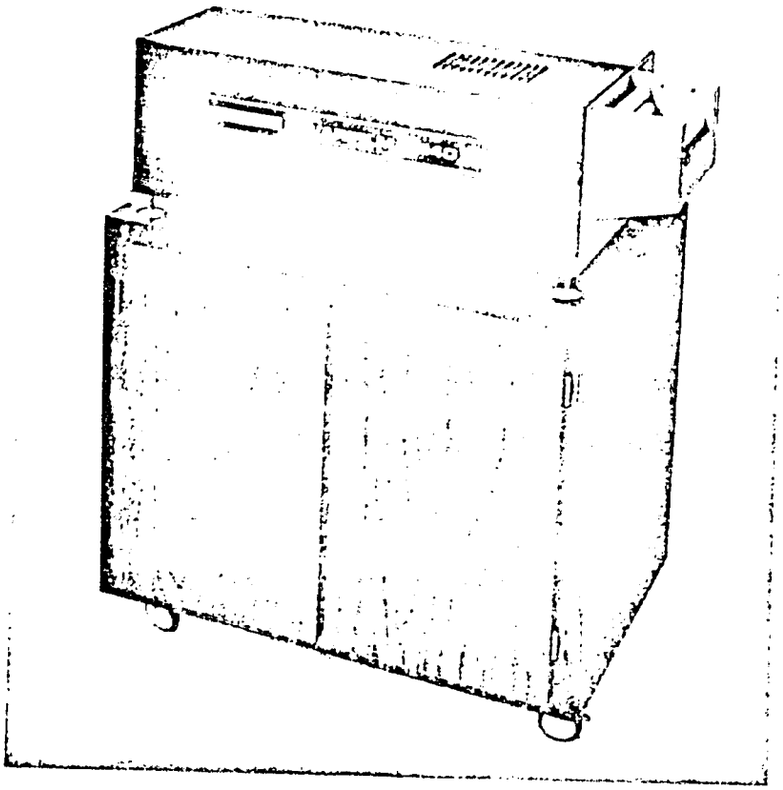
Model Name: 4330-D Microfiche Camera
Type: step-and-repeat
Film Size: 105mm roll X 30m
Input: documents up to 317.5mm X 463.5mm
Reduction: 20X
Dimensions: 172.7cm(H) X 127cm(W) X 86.4cm(D)
Weight: 363 kg.
Indicative Price: $15,000-$18,000
Remarks: Single or double frame selection. Built-in bookholder. Built-in titling system, fiche counter. Automatic exposure optional. Models 4330-E and 4330-F available with 24X reduction. Model 4330-G available with 42X reduction for special and COM formats.

Manufacturer: Dietzgen Corp.

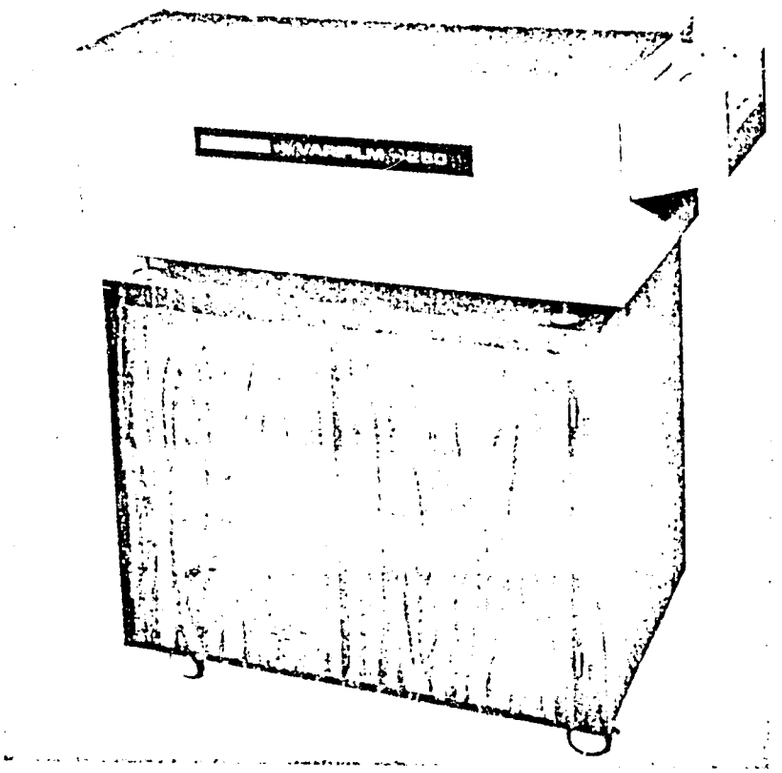


Model Name: PM Mark III Microfiche Camera
Type: step-and-repeat
Film Size: 105mm X 148mm sheet
Input: documents up to 420mm X 600mm, books up to 350mm X 500mm
Reduction: 8X-25.5X, 16X-42X, 48X
Dimensions: 230cm(H) X 160cm(W) X 95cm(D)
Weight: 120 kg.
Indicative Price: f23,800-f21,800
Remarks: Choice of 2 non-interchangeable lenses, either 50mm or 32mm. Supplied with compressor, book copy board, built-in titling camera, high resolution lens, f23,800. With normal 50mm lens, f21,800.

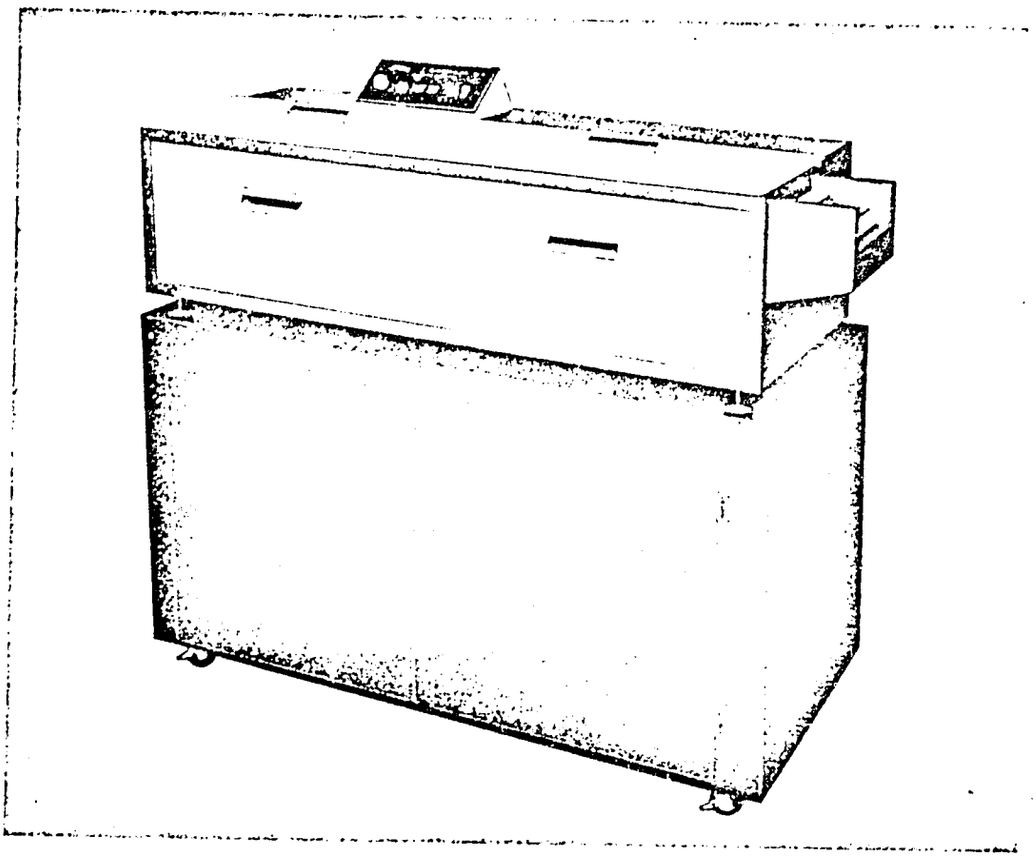
Manufacturer: Documentfoto en Microfilm J.H. Mullens BV



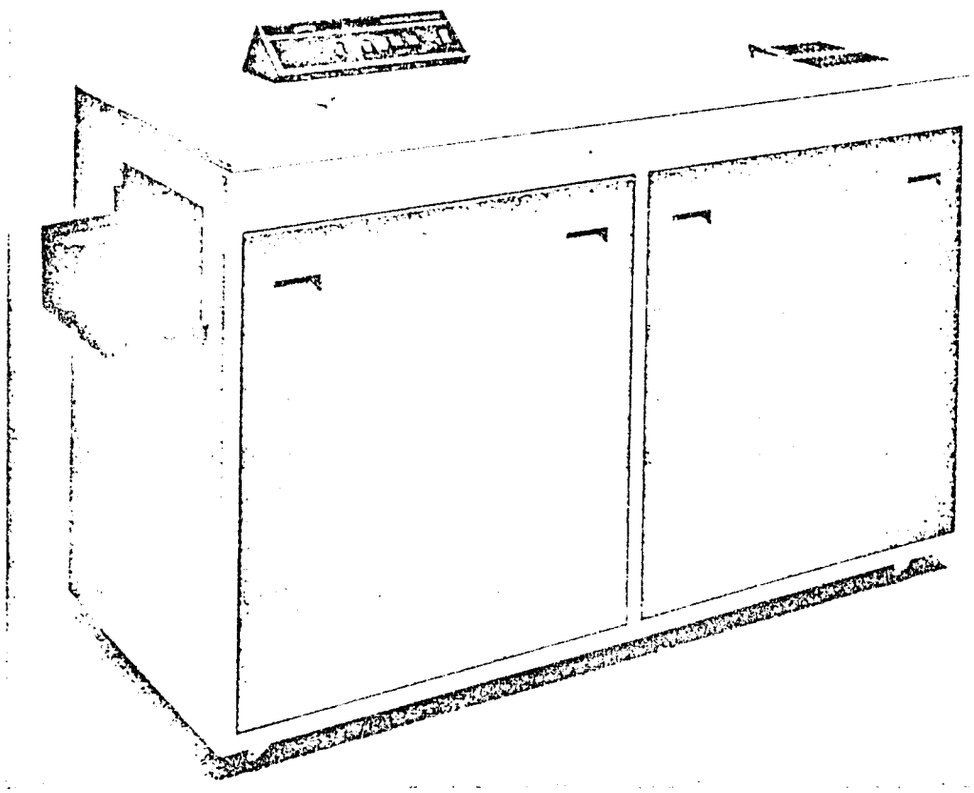
MANUFACTURER: Cordell Engineering, Inc.
210 Broadway, Everett, Ma. 02149
DISTRIBUTOR: Bell & Howell, etc.
MODEL NAME: VARIFILM, 240; B & H Filemaster
DATE INTRODUCED: September 1970
TYPE:
Continuous: Yes
FILM WIDTH: Up to 5 in., up to 127mm
FILM LENGTH: 5 in. to 500 ft.
SPEED (FT/HR): 174 ft./hr., 52.80M/hr.
THERMOSTAT: Variable: 95 deg.F - 110 deg.F, 35 deg.C - 43 deg.C
TANK CAPACITY: ½ gal., 1.9L.
POWER REQUIREMENTS: 110VAC, 50/60 Hz., 15 amp. 220VAC, 50/60 Hz., 8 amp.
PLUMBING REQUIREMENTS: May be plumbed or plumbingless.
DIMENSIONS:
Height: 10 in., 25 cm
Depth: 15 in., 38 cm
Width: 36½ in., 91 cm
WEIGHT: 70 lbs., 31.5 kg.
ACCESSORIES: C-12—Thermostatically Control Water Blender
W-10—Hoses, (3M) (10 ft.) Water Inlet/Drain Set
38-1—Water Filter Element
71-2—Water Filter Housing
TS-1/105—105mm x 100 ft. (30m) Take-up Spool
TS-3/105—105mm x 350 ft. (105m) Take-up Spool
T-5—Feed Tray for Sheet Film Models 240, 321, 421, 600
T-10—Feed Tray for Sheet Film Models 400 and 642
L6-1000—Darkroom Loader for 6,1000 ft. rolls of 16mm
T6-1000—Motorized Film Take-up for 6, 1000 ft. rolls of 16mm
PC-240—Console for Model 240
PC-321—Console, for 321
RS-2—Replenishment System (2 tank)
RS-3—Replenishment System (3 tank)
RS-4—Replenishment System (4 tanks)
SP-5—5 in. Width Scrubber Plenum for Dye Back Removal
SP-10—10 in. Width Scrubber Plenum for Dye Back Removal
SPECIAL FEATURES: Versatility is built into every unit allowing you to intermix soluble dye-back microfilm, microfiche, sheet or roll film. Additional versatility is built into certain Varifilm models allowing them to process negative microfilms with backing.
Technical features include complete solution agitation for uniform rapid development, a thorough and gentle wash which meets archival standards and single pass impingement drying.
PRICE: $2,500.00
DATE: 19 August 1974



MANUFACTURER: Cordell Engineering, Inc.
210 Broadway, Everett, Ma. 02149
DISTRIBUTOR:
MODEL NAME: Varifilm, 260
DATE INTRODUCED: September 1974
TYPE:
Continuous: Yes
Rewind:
Reel and Tank:
Spiral Reel:
FILM WIDTH: Up to 5 in., up to 127mm
FILM LENGTH: 5 in. to 500 ft.
SPEED (FT/HR). 60 - 480 ft./hr., 1.80 - 146.40M
THERMOSTAT: Variable: 95 deg.F - 110 deg.F, 35 deg.C - 43 deg.C
TANK CAPACITY: ½ gal., 1.9L.
POWER REQUIREMENTS: 110VAC, 50/60 Hz, 20 amp
220VAC, 50/60 Hz, 10 amp
PLUMBING REQUIREMENTS: May be plumbed or plumbingless
DIMENSIONS:
Height: 12½ in., 32 cm
Depth: 16 in., 41 cm
Width: 37 in., 94 cm
WEIGHT: 75 lbs., 34 kg.
ACCESSORIES: C-12—Thermostatically Controlled Water Blender
W-10—Hoses, (3M) (10 ft.) Water Inlet/Drain Set
38-1—Water Filter Element
71-2—Water Filter Housing
TS-1/105—105mm x 100 ft. (30m) Metal Take-up Spool
TS-3/105—105mm x 350 ft. (105m) Metal Take-up Spool
TS-16/100—16mm x 100 ft. (30m) Metal Take-up Spool
T-5—Feed Tray for Sheet Film
PC-240—Console
RS-2—Replenishment System (2 tank)
RS-3—Replenishment System (3 tank)
SP-5—5 in. Width Scrubber Plenum for Dye-Back Removal
SP-10—10 in. Width Scrubber Plenum for Dye-Back Removal
SPECIAL FEATURES: Versatility is built into every unit allowing you to intermix soluble dye-back microfilm, microfiche, sheet or roll film. Additional versatility is built into certain Varifilm models allowing them to process negative microfilms with backing.
Technical features include complete solution agitation for uniform rapid development, a thorough and gentle wash which meets archival standards, and single pass impingement drying.
PRICE: $3,000.00
DATE: 20 August 1974

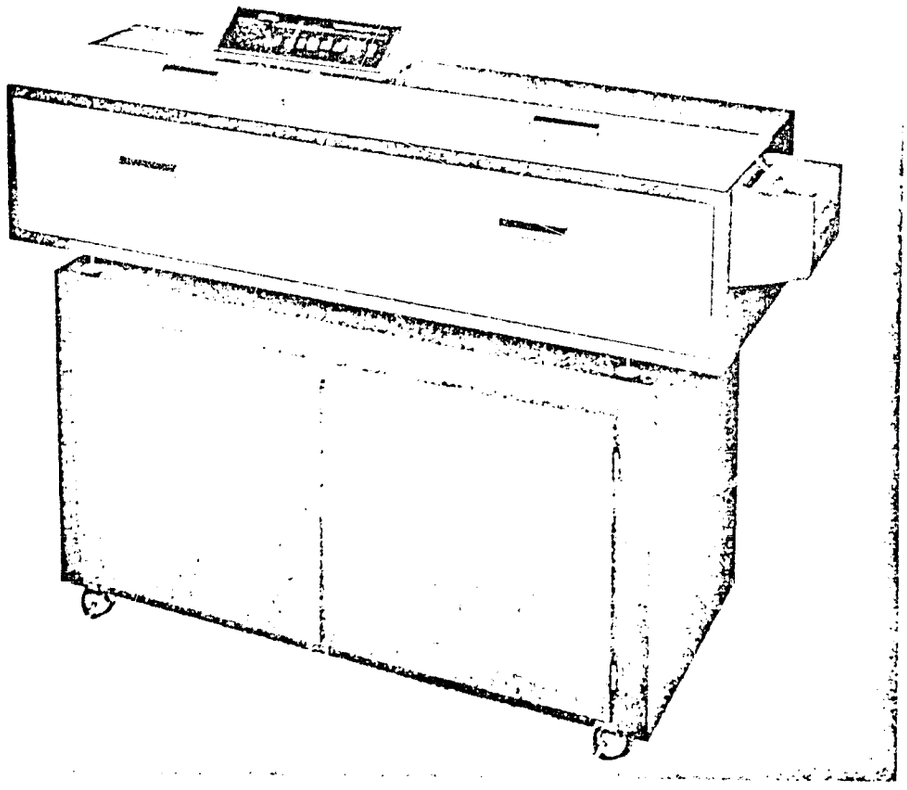


MANUFACTURER: Cordell Engineering, Inc.
210 Broadway, Everett, Ma. 02149
DISTRIBUTOR:
MODEL NAME: VARIFILM, 321
DATE INTRODUCED: December 1966
TYPE:
Continuous: Yes
Rewind:
Reel and Tank:
FILM WIDTH: Up to 5 in., up to 127mm
FILM LENGTH: 5 in. to 1000 ft.
SPEED (FT/HR): 60 – 480 ft./hr., 1.80 – 146.40M
THERMOSTAT: Variable:
95 deg.F – 110 deg.F, 35 deg.C – 43 deg.C
TANK CAPACITY: 1 gal., 3.8 L.
POWER REQUIREMENTS: 110VAC, 50/60 Hz, 15 amp
220VAC, 50/60 Hz, 8 amp
PLUMBING REQUIREMENTS: May be plumbed or plumbingless.
DIMENSIONS:
Height: 17 in., 43 cm
Depth: 20 in., 51 cm
Width: 56 in., 142 cm
WEIGHT: 120 lbs., 54 kg.
ACCESSORIES: C-12—Thermostatically Controlled Water Blender
W-10—Hoses, (3M) (10 ft.) Water Inlet/Drain Set
38-1—Water Filter Element
71-2—Water Filter Housing
TS-1/105—105mm x 100 ft. (30m) Metal Take-up Spool
TS-3/105—105mm x 350 ft. (105m) Metal Take-up Spool
TS-16/100—16mm x 100 ft. (30m) Metal Take-up Spool
T-5—Feed Tray for Sheet Film
PC-321—Console
RS-2—Replenishment System, (2 tanks)
RS-3—Replenishment, (3 tanks)
RS-4—Replenishment System, (4 tanks)
SP-5—5 in. Width Scrubber Plenum for Dye Back Removal
SP-10—10 in. Width Scrubber Plenum for Dye Back Removal
SPECIAL FEATURES: Versatility is built into every unit allowing you to intermix soluble dye-back microfilm, microfiche, sheet or roll film. Additional versatility is built into certain Varifilm models allowing them to process negative microfilms with backing.
Technical features, include complete solution agitation for uniform rapid development, a thorough and gentle wash which meets archival standards, and single pass impingement drying.
PRICE: $3,600.00
DATE: 20 August 1974

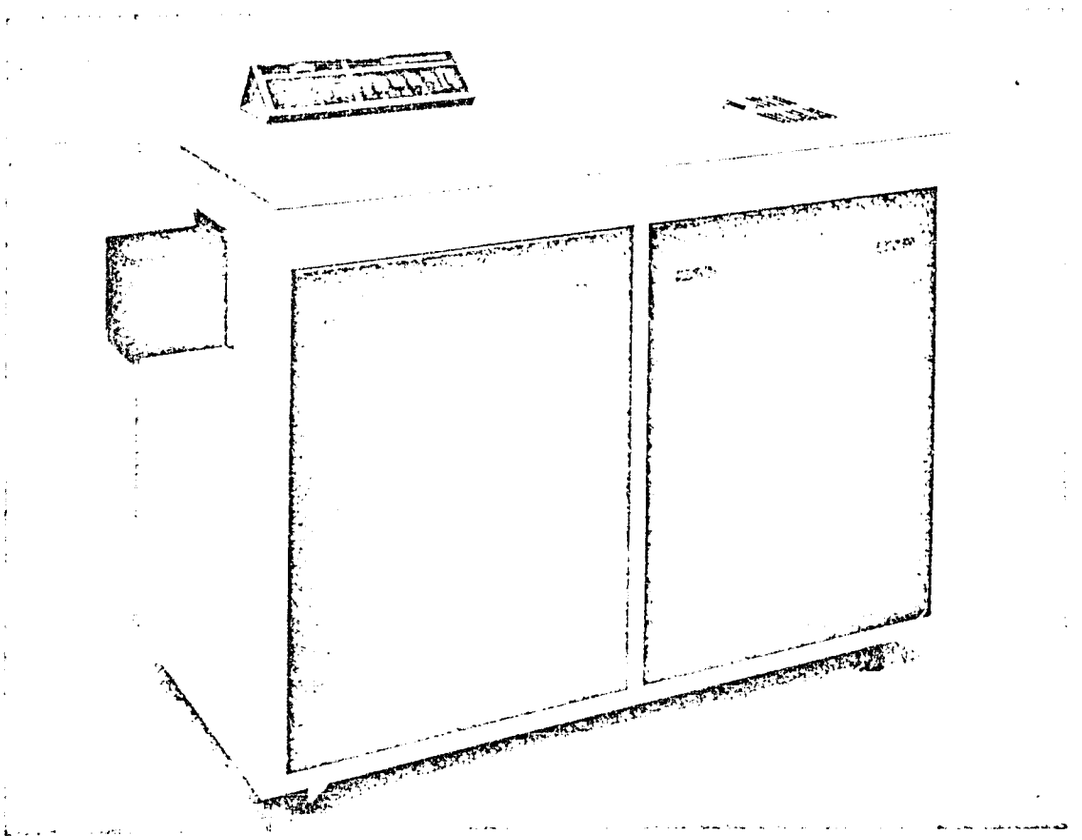


MANUFACTURER: Cordell Engineering, Inc.
210 Broadway, Everett, Ma. 02149
DISTRIBUTOR:
MODEL NAME: VARIFILM, 400
DATE INTRODUCED: October 1970
TYPE:
Continuous: Yes
Rewind:
Reel and Tank:
Spiral Reel:
FILM WIDTH: Up to 10 in., up to 254 mm
FILM LENGTH: 5 in. to 3000 ft.
SPEED (FT/HR): 60 – 480 ft./hr., 1.80 – 146.40M
THERMOSTAT: Variable, 80 deg.F – 110 deg.F, 26 deg.C – 43 deg.C
TANK CAPACITY: 2 gals., 7.6 L.
POWER REQUIREMENTS: 110VAC, 50/60 Hz, 2 phase with neutral, 15 amps per leg
PLUMBING REQUIREMENTS: Must be plumbed
DIMENSIONS:
Height: 40 in., 102 cm
Depth: 26 in., 66 cm
Width: 71 in., 180 cm
WEIGHT: 500 lbs., 227 kg.
ACCESSORIES: C-12—Thermostatically Controlled Water Blender
W-10—Hoses, (3M) (10 ft.) Water Inlet/Drain Set
38-1—Water Filter Element
71-2—Water Filter Housing
TS-1/105—105mm x 100 ft. (30m) Metal Take-up Spool
TS-3/105—105mm x 350 ft. (105m) Metal Take-up Spool
TS-16/100—16mm x 100 ft. (30m) Metal Take-up Spool
T-10—Feed Tray for Sheet Film
L6-1000—Darkroom Loader for 6,1000 ft. rolls of 16mm.
T6-1000—Motorized Film Take-up for 6, 1000 ft. rolls of 16mm
RS-3—Replenishment System, (3 tank)
SP-10—10 in. Width Scrubber Plenum for Dye Back Removal
SPECIAL FEATURES: Versatility is built into every unit allowing you to intermix soluble dye-back microfilm, microfiche, sheet or roll film. Additional versatility is built into certain Varifilm models allowing them to process negative microfilms with backing.

Technical features, include complete solution agitation for uniform rapid development, a thorough and gentle wash which meets archival standards, and single pass impingement drying.
PRICE: $8,200.00
DATE: 20 August 1974



MANUFACTURER: Cordell Engineering, Inc.
210 Broadway, Everett, Ma. 02149
DISTRIBUTOR:
MODEL NAME: VARIFILM, 421
DATE INTRODUCED: July 1973
TYPE:
Continuous: Yes
Rewind:
Reel and Tank:
FILM WIDTH: Up to 5 in., up to 127mm
FILM LENGTH: 5 in. to 1000 ft.
SPEED (FT/HR): 60 - 480 ft./hr., 1.80 - 146.40M
THERMOSTAT: Variable: 95 deg.F - 110 deg.F, 35 deg.C - 43 deg.C
TANK CAPACITY: 1 gal.
POWER REQUIREMENTS: 110 VAC, 50/60 Hz, 20 amp. 220VAC, 50/60 Hz, 10 amp.
PLUMBING REQUIREMENTS: May be plumbed or plumbingless.
DIMENSIONS:
Height: 17 in., 43 cm
Depth: 20 in., 51 cm
Width: 67 in., 170 cm
WEIGHT: 150 lbs., 67.5 kg.
ACCESSORIES: C-12—Thermostatically Controlled Water Blender
W-10—Hoses, (3M) (10 ft.) Water Inlet/Drain Set
38-1—Water Filter Element
71-2—Water Filter Housing
TS-1/105—105mm x 100 in. (30m) Metal Take-up Spool
TS-3/105—105mm x 350 ft. (105m) Metal Take-up Spool
TS-16/100—16mm x 100 ft. (30m) Metal Take-up Spool
T-5—Feed Tray for Sheet Film
PC-321—Console, Model 321, 421
RS-2—Replenishment System, (2 tank)
RS-3—Replenishment System, (3 tank)
RS-4—Replenishment System, (4 tank)
SP-5—5 in. Width Scrubber Plenum for Dye Back Removal
SP-10—10 in. Width Scrubber Plenum for Dye Back Removal
SPECIAL FEATURES: Versatility is built into every unit allowing you to intermix soluble dye-back microfilm, microfiche, sheet or roll film. Additional versatility is built into certain Varifilm models allowing them to process negative microfilms with backing.
Technical features, include complete solution agitation for uniform rapid development, a thorough and gentle wash which meets archival standards, and single pass impingement drying.
PRICE: $4,500.00
DATE: 20 August 1974



MANUFACTURER: Cordell Engineering, Inc.
210 Broadway, Everett, Ma. 02149
DISTRIBUTOR:
MODEL NAME: Varifilm, 600
DATE INTRODUCED: May 1974
TYPE:
Continuous: Yes
Rewind:
Reel and Tank:
Spiral Reel:
FILM WIDTH: Up to 5 in., up to 127mm
FILM LENGTH: 5 in. to 1000 ft.
SPEED (FT/HR): 60 – 480 ft. hr., 1.80 – 146.40M
THERMOSTAT: Variable: 95 deg.F – 110 deg.F, 35 deg.C – 43 deg.C
TANK CAPACITY: 5 gal.neutral. 15 amps per leg
PLUMBING REQUIREMENTS: May be plumbed
DIMENSIONS:
Height: 40 in., 102 cm
Depth: 26 in., 66 cm
Width: 61 in., 155 cm
WEIGHT: 475 lbs., 214 kg.

ACCESSORIES: C-12—Thermostatically Controlled Water Blender
W-10—Hoses, (3M) (10 ft.) Water Inlet Drain Set
38-1—Water Filter Element
71-2—Water Filter Housing
TS-1 105—105mm x 100 ft. (30m) Metal Take-up Spool
TS-3 105—105mm x 350 ft. (105m) Metal Take-up Spool
TS-16 100—16mm x 100 ft. (30m) Metal Take-up Spool
T-5—Feed Tray for Sheet Film

SPECIAL FEATURES: Versatility is built into every unit allowing you to intermix soluble dye-back microfilm, microfiche, sheet or roll film. Additional versatility is built into certain Varifilm models allowing them to process negative microfilms with backing.
Technical features, include complete solution agitation for uniform rapid development, a thorough and gentle wash which meets archival standards, and single pass impingement drying.

PRICE: $7,400.00
DATE: 20 August 1974

Reader/Printer and the 600 Microfilm Reader-Printer.

400CT Reader-Printer: The 400CT Reader-Printer is designed to handle 3M cartridges containing originals on 16mm microfilm. The 400CT has a motorized film drive with variable pushbutton control that allows the unit to attain scanning speeds of from 10 inches to 400 feet per minute.

One feature of the 400CT is Lateral Film Traverse capability, which enables the unit to handle Duo and Duplex Imaged Microfilm. There is also a high-magnification lens capability to provide enlarged images for easy viewing and printing. The unit has an increased screen illumination of 50% to improve viewing under severe lighting conditions. The light source is provided by a 200-watt, 20-volt quartz iodine lamp with reflector. The lamp position is adjustable along the optical centerline.

The 400CT uses an eye index method that allows the desired frames to be found using the convenient meter readings. When the desired frame is located, it may be viewed on the screen or, by pushing a button, printed as an 8-1/2 x 11 inch copy, which is delivered in six seconds.

Electrical requirements for the 400CT Reader-Printer are 110 volts, 60 Hz, 10 amperes. The unit measures 17 inches wide x 21-1/2 inches deep x 26-1/2 inches high.

500C Page Search Reader/Printer: The 500C Page Search Reader/Printer is designed to retrieve specific microfilm images from microfilm cartridges. The 500C is a high-speed unit able to search a file of 10,000 entries and produce a dry print in seconds.

The unit is designed to handle 16mm microfilm cartridges. It can also handle any blip-encoded 16mm microfilm, positive or negative, with the automatic centering feature. The unit's film traverse and image-rotation capability also makes it possible to handle microfilm on image formats.

The unit features digital keyboard input and pushbutton operation. Images are projected on a 12 x 16 inch non-glare screen. There are a wide variety of interchangeable lenses available so that the unit may handle almost any microfilm reduction. Copies of desired frames are made on wide latitude dry-silver-paper, producing low-cost, completely dry prints.

The electrical requirements for the 500C are 110 volts, 60 Hz, 10 amperes. The light source is provided by a 200-watt, high-illumination lamp. The unit measures 18-1/4 inches wide x 24-3/4 inches deep x 31-1/2 inches high and has a weight of 140 pounds.

600 Microfilm Reader-Printer: The 600 Microfilm Reader-Printer has a high-resolution 14 x 18 inch screen that allows display of two 8-1/2 x 11 inch documents at one time. The large-size screen also permits viewing of computer-output-microfilm documents, engineering drawings, and wiring diagrams at full or slightly reduced sizes.

The 600 is available with a wide range of high-magnification lenses. Lenses are available in two groups: Group 1 contains lenses with magnifications of 15X, 19X, 23X and 25X; Group 2 contains lenses with magnifications of 31X, 35X, 40X, and 47X. The variety of lenses means the operator does not need to readjust microfilm images to view the entire document. Duo lenses allow images to be further blown up for closer viewing. Marginal film can be read with greater accuracy by switching to higher magnification lenses. Images may be rotated 180° in either direction to further aid in viewing.

The Model 600 can accept 16mm open spools threaded onto 3M Easy Load leaderless cartridges or regular 16mm 3M cartridges. Film is threaded automatically, without handling by the operator. The unit accepts microfilms from 2.5 to 6 mil thick.

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