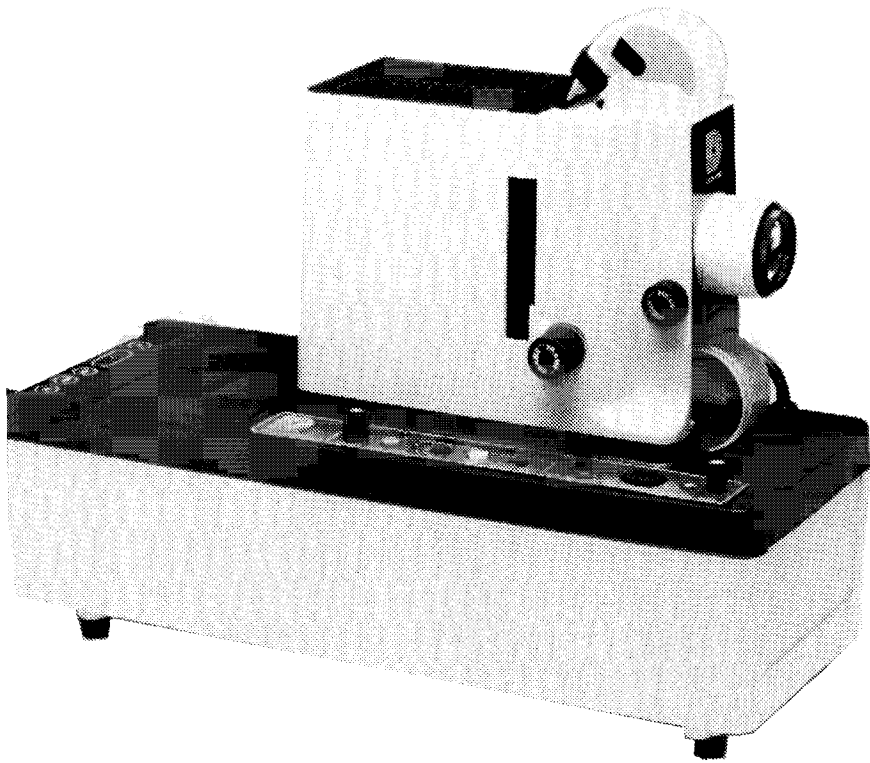


# Operating Instructions

## Micromatic II Sound Filmstrip Projector



MODELS  
28A81C  
28A85C Response

Audio Visual

**DUKANE**

# **IMPORTANT SAFETY INSTRUCTIONS**

When using your Micromatic II, basic safety precautions should always be followed, including the following:

1. Read and understand all instructions before using.
2. Close supervision is necessary when any projector is used by or near children. Do not leave projector unattended while in use.
3. Care must be taken as burns can occur from touching hot parts.
4. Do not operate projector with a damaged cord or if the projector has been dropped or damaged – until it has been examined by a qualified serviceman.
5. Position the cord so that it will not be tripped over, be pulled or contact hot surfaces.
6. If an extension cord is necessary, a cord with a current rating at least equal to that of the projector should be used. Cords rated for less amperage than the projector may overheat.
7. Always unplug projector from electrical outlet before cleaning and servicing and when not in use. Never yank cord to pull plug from outlet. Grasp plug and pull to disconnect.
8. Let projector cool completely before putting away. Loop cord loosely around projector when storing.
9. To protect against the risk of electric shock, do not immerse this projector in water or other liquids.
10. To avoid the risk of electric shock, do not disassemble this projector, but take it to a qualified serviceman when some service or repair work is required. Incorrect reassembly can cause electric shock when the projector is used subsequently.
11. The use of accessory attachment not recommended by the manufacturer may cause a risk of fire, electric shock or injury to persons.
12. Connect this projector to a grounded outlet.
13. Disconnect this unit from its source of supply before replacing the projection lamp.

Additional lamp safeguards: never handle lamps with bare fingers; periodically inspect lamps, when they're turned off, for signs of blistering or blackening; insure proper action of the cooling system; turn off the projector immediately if the image becomes abnormally dim; never operate a projector with the lamp housing open; and make sure that the lamp itself is properly seated.

## **SAVE THESE INSTRUCTIONS**

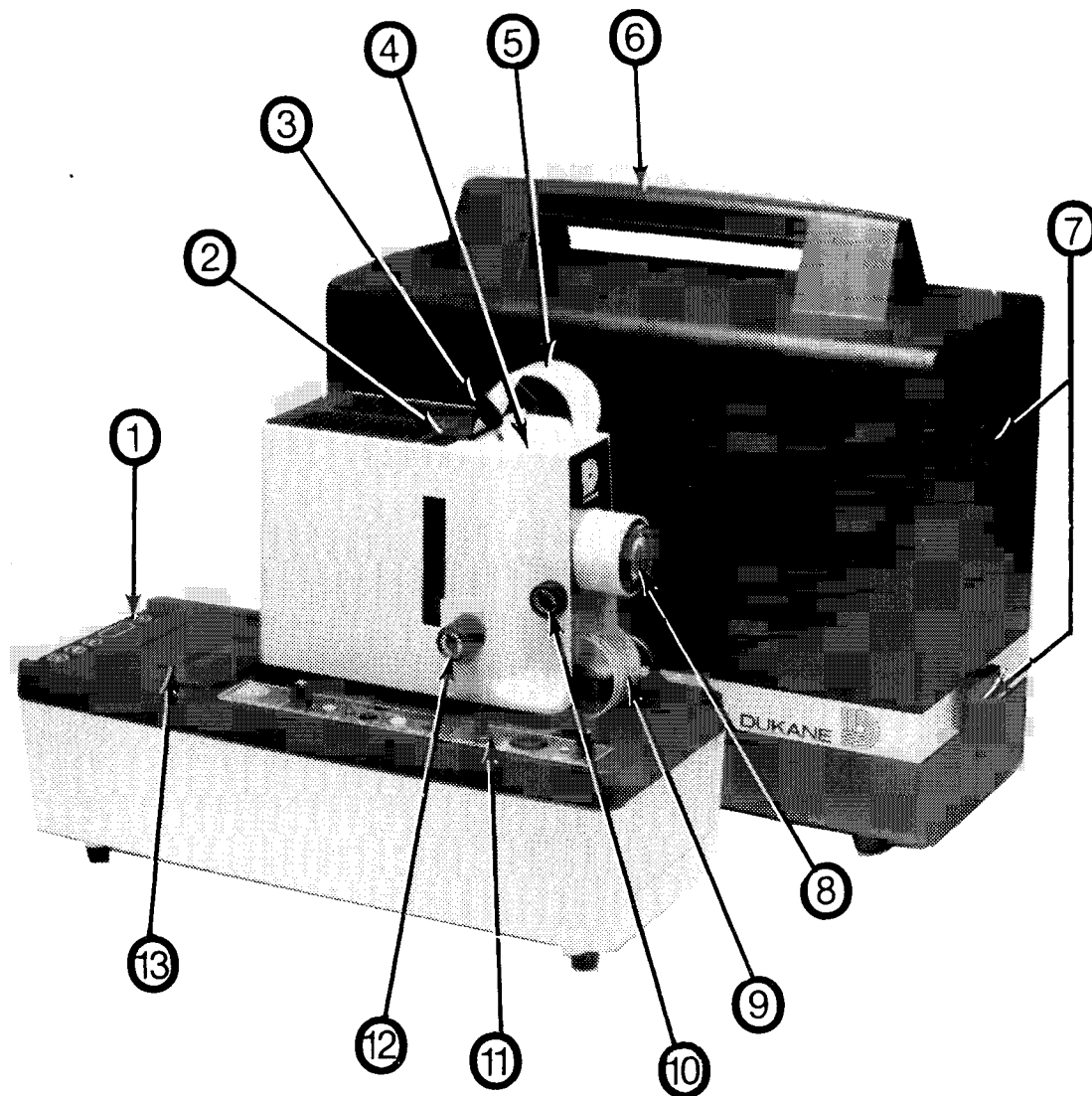
# TABLE OF CONTENTS

Page

	IMPORTANT SAFETY INSTRUCTIONS .....	Inside Cover
1	INDEX OF FUNCTIONAL PARTS .....	1
2	SPECIFICATIONS .....	3
3	GENERAL DESCRIPTION .....	3
4	UNIT OPERATION .....	4
	4.1 Setting Up .....	4
	4.2 Cassette Loading .....	5
	4.3 Film Loading and Framing .....	5
	4.4 Starting the Presentation .....	7
	4.5 Pause Control .....	8
	4.6 Finishing the Presentation .....	8
	4.7 Remote Control Operation .....	8
	4.8 Automatic Operation .....	9
	4.9 Manual Operation.....	9
	4.10 Other Uses of the Micromatic II .....	9
	4.11 2 x 2 Slide Operation .....	9
5	28A85C RESPONSE MODEL .....	11
6	ACCESSORIES .....	11
	6.1 Accessory Remote Speaker .....	11
7	CARE IN USE .....	12
	7.1 Maintenance .....	12
	7.2 Lamp Replacement .....	12
	7.3 Projection Lens.....	14
	7.4 Condenser Optics .....	15
	7.5 Mirror .....	15
	7.6 Filmstrip Carrier.....	15
	7.7 Storage .....	16
	7.8 Information on Lamp Warranty .....	16
8	SERVICING .....	17
	8.1 Shipping Information .....	17
	8.2 Service .....	17
	8.3 To Receive No Charge In-Warranty Repairs .....	17
9	ELECTRICAL SAFETY GROUNDING INSTRUCTIONS ....	18
	UNIT WARRANTY .....	Back Cover

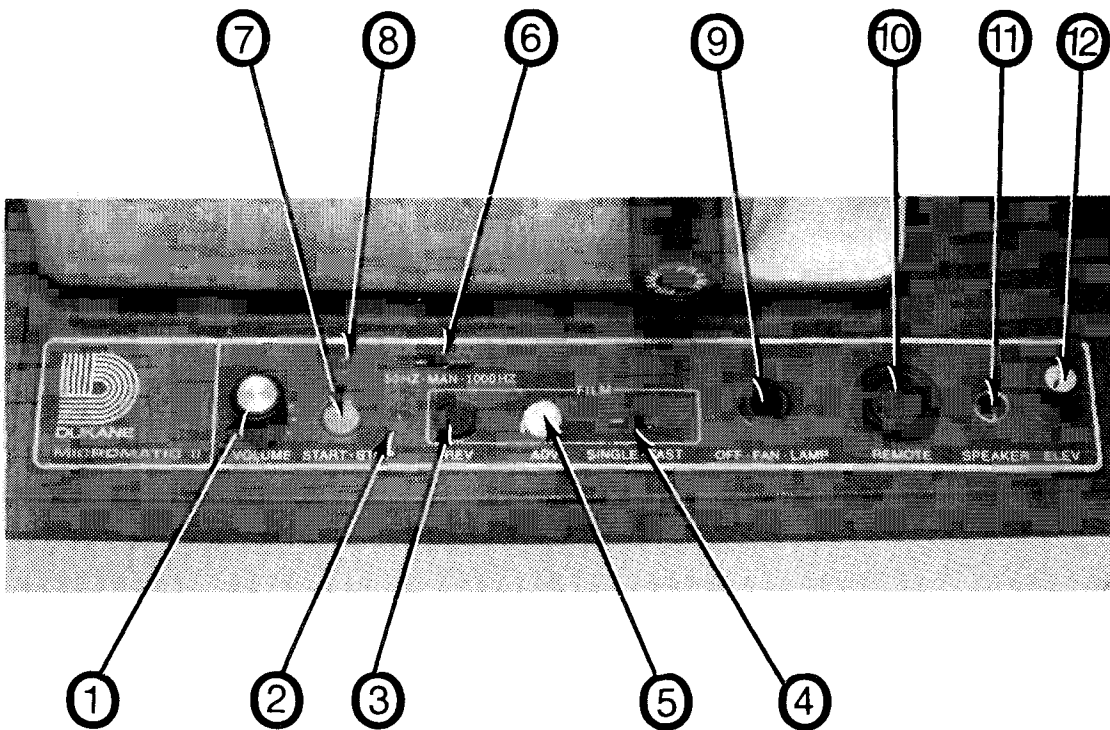
# 1 - INDEX OF FUNCTIONAL PARTS

A number of terms are used frequently in this instruction booklet. The MICROMATIC II will be easier to operate if you become familiar with the terms for the functional parts listed below:



*Dukane Micromatic II Sound Filmstrip Projector*

- |                       |                          |
|-----------------------|--------------------------|
| 1. CASSETTE CONTROLS  | 8. PROJECTION LENS       |
| 2. RETRACTABLE HANDLE | 9. LOWER FILM SPRING     |
| 3. FILMSTRIP CARRIER  | 10. FOCUS KNOB           |
| 4. FILM CUP           | 11. CONTROL PANEL        |
| 5. UPPER FILM SPRING  | 12. FRAMING KNOB         |
| 6. CARRYING CASE      | 13. CASSETTE COMPARTMENT |
| 7. CASE LATCHES       |                          |



***Dukane Micromatic II Control Panel***

- |                                     |                                    |
|-------------------------------------|------------------------------------|
| 1. VOLUME CONTROL                   | 8. RESPONSE LIGHT<br>(28A85C Only) |
| 2. PILOT LIGHT                      | 9. POWER SWITCH                    |
| 3. REVERSE FILM BUTTON              | 10. REMOTE CONTROL<br>RECEPTACLE   |
| 4. FILM SPEED SWITCH                | 11. REMOTE SPEAKER JACK            |
| 5. ADVANCE FILM BUTTON              | 12. ELEVATION BUTTON               |
| 6. MODE SWITCH                      |                                    |
| 7. RESPONSE SWITCH<br>(28A85C Only) |                                    |

## 2 – SPECIFICATIONS

Models.....	28A81C, 28A85C
Dimensions .....	15-1/2" (39.4 cm) x 7-1/4" (18.4 cm) W. x 17-1/2" (44.5 cm) L.
Weight .....	17-1/2 pounds (7.9 kg)
Power .....	28A81C, 28A85C — 120V, 50/60 Hz
Lamp .....	FHS, 300 W., 70 Hr.
Lenses .....	1-1/2" (38 mm) 3" (76 mm) 5" (127 mm)
Slides .....	Standard 2 x 2
Filmstrips .....	Standard 35mm Single Frame (200 Frames Maximum)
Tape .....	Standard Cassette (C-60 Max.)
Speaker .....	3" (7.6 cm) x 5" (12.7 cm)
Cooling.....	Fan

## 3 – GENERAL DESCRIPTION

Outstanding craftsmanship and advanced engineering make the Micromatic II the leading sound filmstrip projector in today's market. Designed to meet all your audio visual requirements, the Micromatic II will inform your students, train your employees or sell your products. It features automatic 50 Hz cue operation and a brilliant, sharp picture for filmstrips and slides. Whisper quiet operation and simple, easy to operate controls are a trademark of this high performance, superior quality projector.

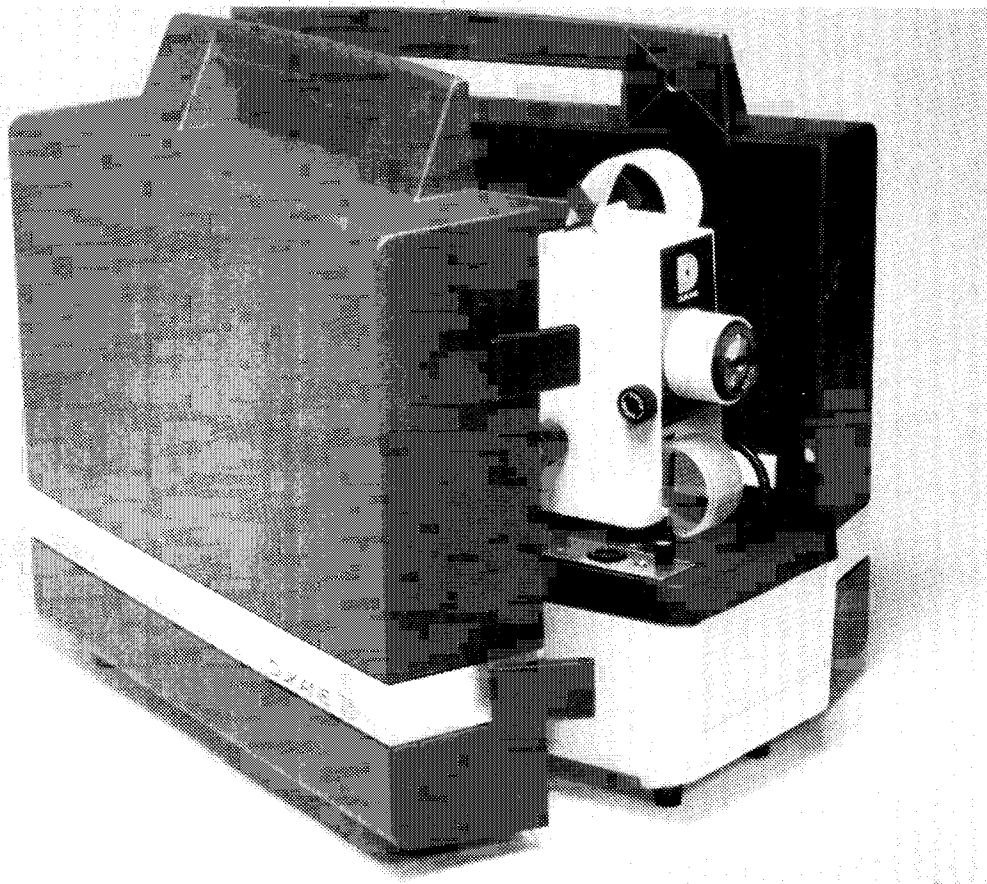
Your Dukane projector is designed to incorporate rugged simplicity with efficient operation. With a minimum of routine care and maintenance, it will provide you with many years of dependable service.

## 4 – UNIT OPERATION

### 4.1 Settling Up

The Micromatic II uses 35mm single frame filmstrips and 1-7/8 IPS tape cassettes.

1. To remove the Micromatic II carrying case, place the unit on the projection table with the latch side of the case facing the screen. Pull out on the latches and push the sides of the case away from the projector (Figure 1).



**FIGURE 1**

2. For Models 28A81C and 28A85C, plug the AC power cord into a 120 volt, 50/60 Hz, AC outlet.
3. Flip the power switch on the film control panel to the FAN position and then to the LAMP position. The green pilot light signals when the amplifier is on.

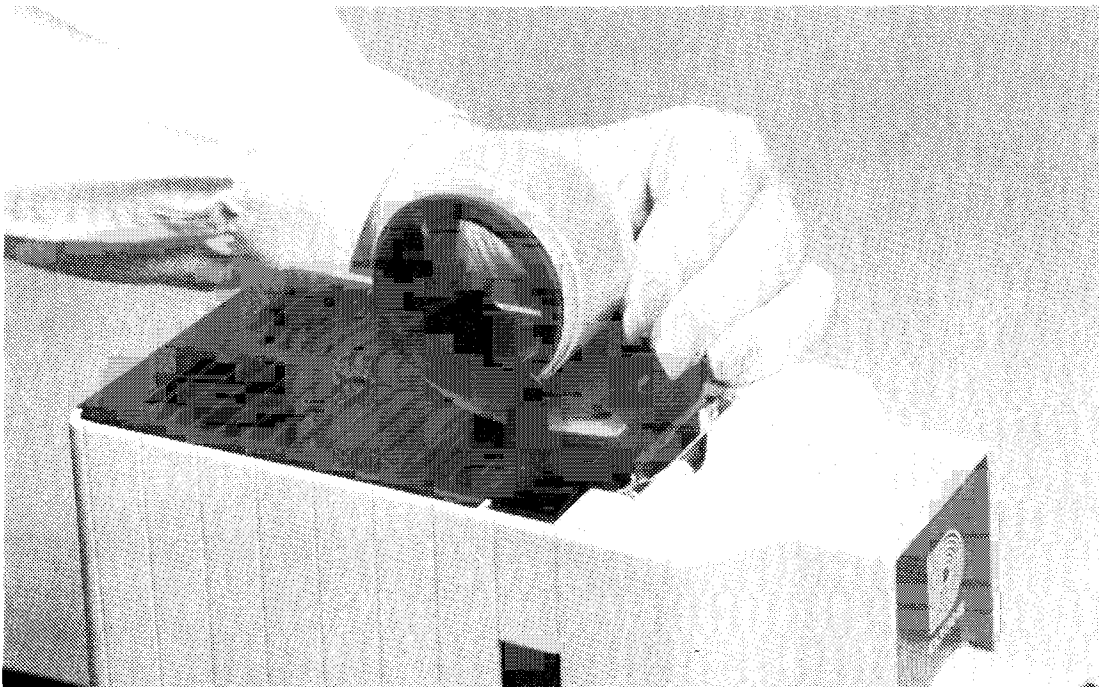
## 4.2 Cassette Loading

1. Press STOP/EJECT key to open cassette compartment.
2. Insert cassette with tape supply on the left-hand side into the cassette receiver, and close cassette compartment.

If a 50 Hz tape cassette is used (Automatic Advance Program), slide the mode switch located on the control panel to the 50 HZ position. To operate the Micromatic II as a manual filmstrip projector with push button control, slide the mode switch to the MANUAL position. On Model 28A85C, there is a 3-position mode switch for manual operation, 50 Hz or 1000 Hz film advance.

## 4.3 Film Loading and Framing

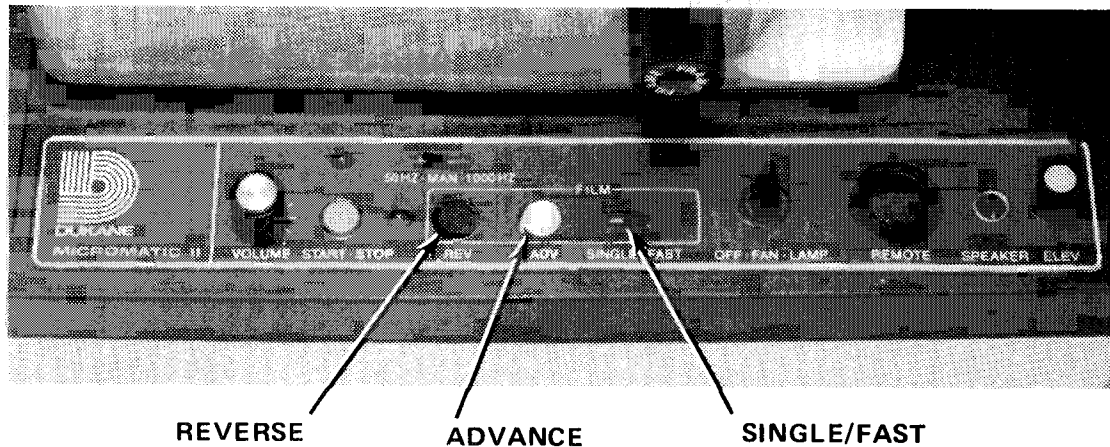
1. Filmstrip should be properly wound with the beginning of the program on the outside of the roll. Swing the film spring back for easy filmstrip loading.
2. Place the 35mm filmstrip in the film spring. Insert the START frame of the filmstrip into the filmstrip carrier as shown (Figure 2).



**FIGURE 2**

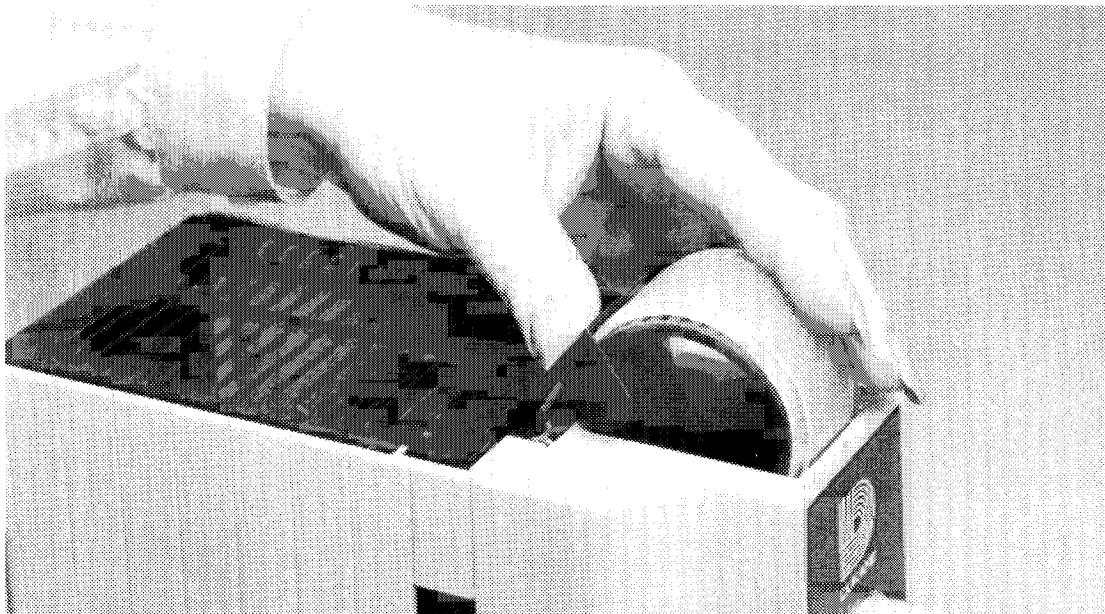


- Slide the film speed control switch to the FAST position. While pushing the filmstrip into the carrier, advance the filmstrip by pressing the film advance button (Figure 3) until the FOCUS frame appears on the screen.



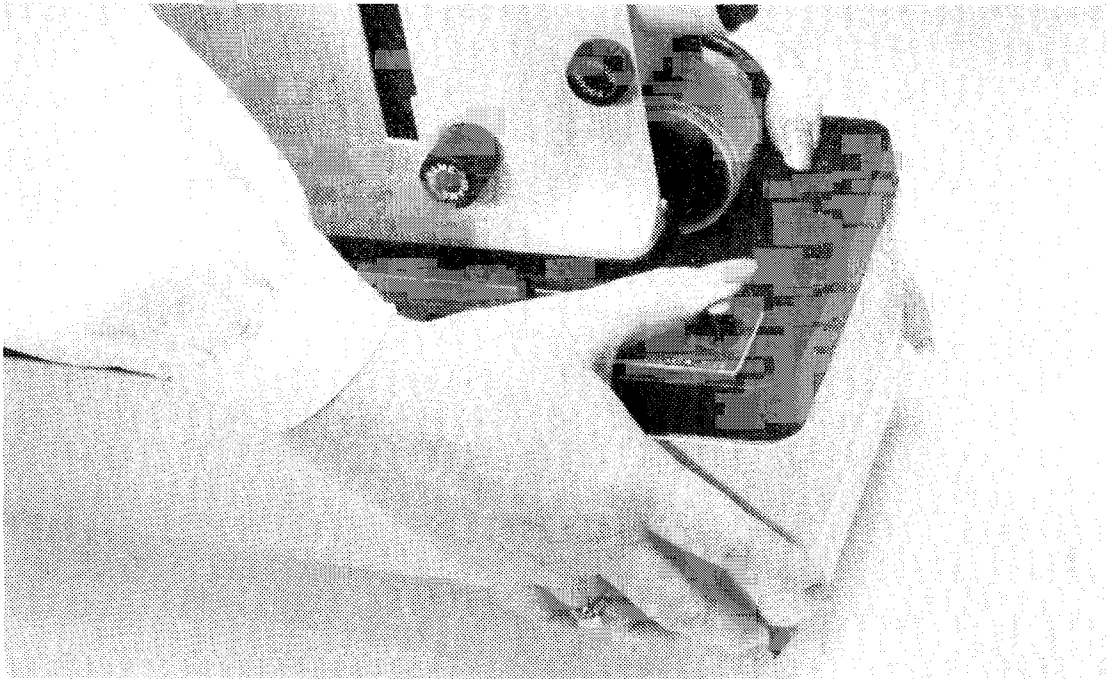
**FIGURE 3**

- Adjust the framing by turning the framing knob on the side of the unit until the complete frame is visible. Rotate the focus knob to create a sharp, clear image on the screen. Flip the film spring forward so that the filmstrip coil drops into the film cup (Figure 4).



**FIGURE 4**

- To raise or lower the picture on the screen, press the elevation button completely down on the control panel while you raise or lower the projector (See Figure 5).



**FIGURE 5**

**NOTE:** The advance and rewind controls for filmstrip are located on the film control panel. To advance the filmstrip rapidly, move the film speed switch to the FAST position and press the film advance button. For rapid rewind, press the film reverse button. To advance or rewind the filmstrip one frame at a time, move the film speed switch on the control panel to the SINGLE position and follow the same procedure for forward and reverse operation (Figure 3).

#### **4.4 Starting the Presentation**

1. At this point, the FOCUS frame should be centered and focused. Follow the instructions on the FOCUS frame for synchronization. (i.e., Advance to next frame and start sound).
2. Depress the cassette control PLAY key. The sound will begin, and the filmstrip will advance automatically.
3. Adjust volume control to a suitable sound level.

**NOTE:**

**IF PICTURE IS BEHIND SOUND:**

With the film speed switch in the SINGLE position, press the advance button until the filmstrip is coordinated with the sound.

#### **IF SOUND IS BEHIND PICTURE:**

With film speed switch in SINGLE position, press the reverse button until the frame corresponds with the sound.

#### **4.5 Pause Control**

To stop the program for questions and answers or class discussion, press the PAUSE key. To restart the program, press the PAUSE key again.

#### **4.6 Finishing the Presentation**

1. When the program is finished, the cassette deck will automatically shut off or the cassette STOP/EJECT button can be used.
2. Push the cassette REWIND button. Allow the tape to rewind completely before again pressing the STOP button.
3. To rewind the filmstrip, press the film reverse button. Allow the film to rewind completely before stopping. If the filmstrip is not engaged in the unit, it must be removed from the lower film spring.

**NOTE:** Rewinding of the tape cassette and the filmstrip may be done simultaneously.

4. To remove the film, guide remainder of the film back out of the film carrier. Remove the film roll from the upper film spring and replace in film container.
5. To remove the tape cassette, press the STOP/EJECT key. The top of the cassette will pop out and is easily removed. Replace tape cassette in its appropriate container.
6. Push down on the elevation button and retract the legs before putting the projector in its case.

#### **4.7 Remote Control Operation**

The Micromatic II functions as a remote control projector with the accessory remote control cord (#110-1727A). Plug the (6 Prong) remote control cord plug into the remote receptacle on the film control panel. The remote control has manual advance and reverse capability in the single and fast modes. The remote control cord comes equipped with a 12 foot cord. If additional cord length is needed, an accessory 25 foot extension cord (200-468) for the remote control can be added.

## **4.8 Automatic Operation**

The Micromatic II can be operated both automatically and manually. To operate automatically, the mode switch on the control panel must be switched to 50 HZ.

## **4.9 Manual Operation**

For manual operation of the Micromatic II, the mode switch should be switched to MAN. Press the film control button for each picture change. The accessory remote control cord can be plugged into the cord receptacle at the control panel of the Micromatic II.

## **4.10 Other Uses of the Micromatic II**

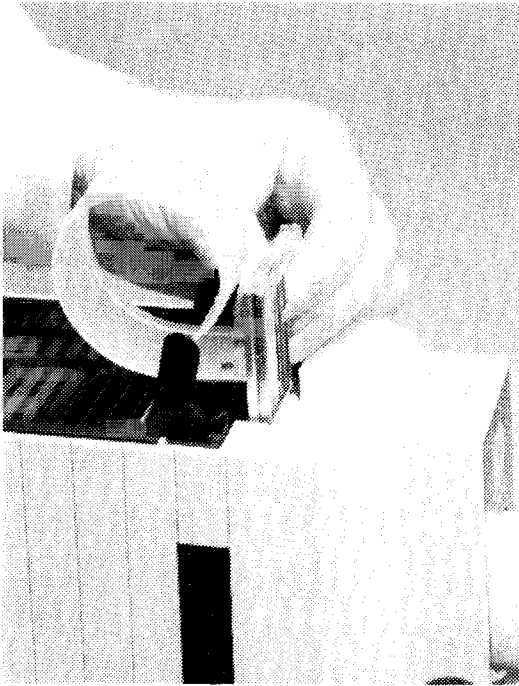
1. The Micromatic II may be used as a silent filmstrip or slide projector. Simply follow the directions for the filmstrip operation omitting the use of a tape cassette.
2. The Micromatic II may also be used as a tape cassette player. For this purpose, follow the directions for regular use, but put the power switch on the film control panel in the FAN position.

## **4.11 2 x 2 Slide Operation**

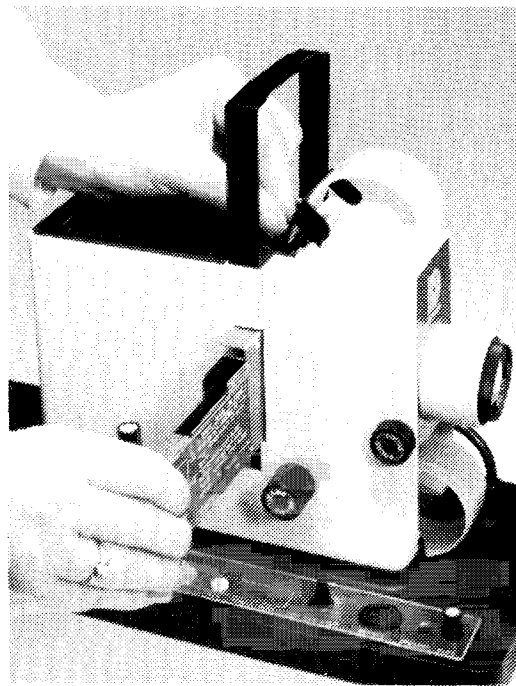
Raise the retractable carrying handle to the upright position. Remove the filmstrip carrier by taking hold of the top edge of the carrier and pulling straight up (Figure 6). There are two accessory slide changers available for manual operation. Manual slide changer (178-25) handles one slide at a time. The manual slide changer is inserted into the opening on the control side of the projector. Lift the slide changer lock pin and push the slide changer into place. Pull the handle on the manual slide changer out and place the slide in the slot. Pull the handle out to view the slide. To remove the slide, rotate swing bar into slide channel and push handle in. To remove the manual slide changer, pull up the slide changer lock pin and pull the manual changer out (Figure 7).

The accessory 2 x 2 stack loader (178-20A) will handle a program of 20 slides. Raise the retractable carrying handle, remove the carrier, pull up on the slide changer lock pin and push the stack loader into the opening on the control side of the projector. Place the slides in the front supply compartment. Pull the handle on the stack loader out and push in, the slide will then be in position for

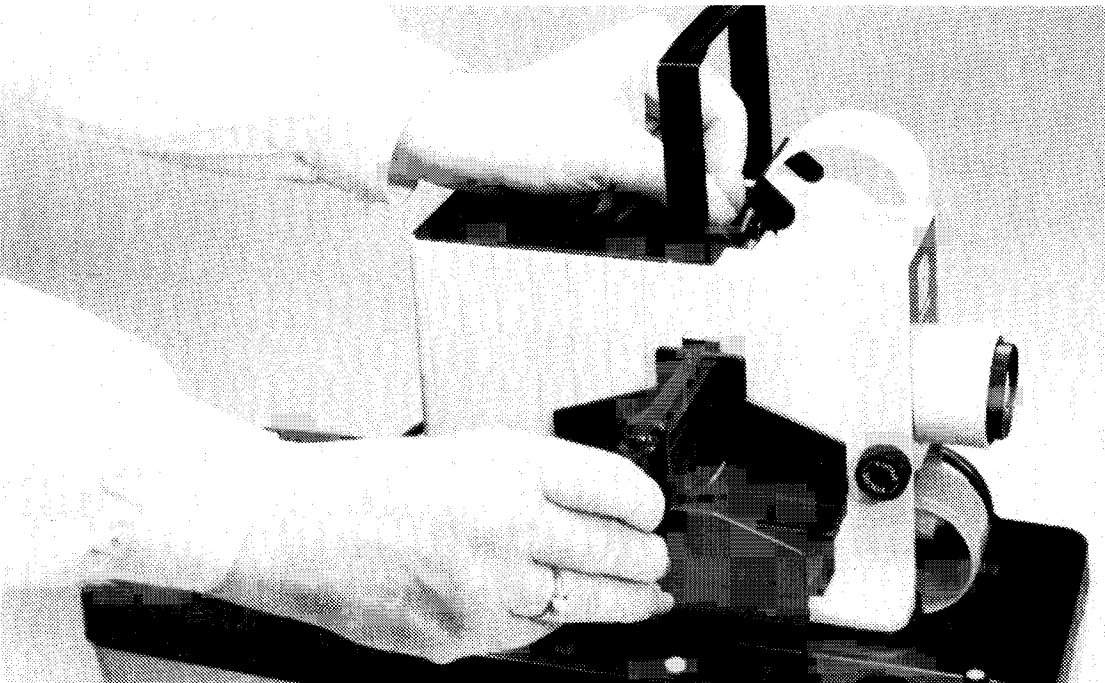
projection. It will automatically eject into the rear supply compartment with the next push-pull motion. To remove the stack loader, raise the slide changer lock pin and pull the stack loader out (Figure 8).



**FIGURE 6**



**FIGURE 7**



**FIGURE 8**

## **5 – 28A85C RESPONSE MODEL**

The Response Micromatic II automatically advances the picture with the sound until a predetermined signal on the sound track stops the program for discussion or response. A red response light on the film control panel is lit when the projector is in the HOLD mode. The picture remains on the screen until the program is resumed by pressing the red response button on the film control panel or on the accessory remote control cord (#110-1730A). Model 28A85C has the feature of both 50 Hz and 1000 Hz program advance and 50 Hz and 150 Hz program stop.

## **6 – ACCESSORIES**

Manual Slide Changer .....	Part #178-25
Stack Loader for 25 2" x 2" Slides .....	Part #178-20A
Remote Speaker .....	Part #438-388
Headphone .....	Part #7A926
25 Ft. Remote Extension Cord for 110-1727A .....	Part #200-468
Remote Control .....	Part #110-1727A
Response Remote Control .....	Part #110-1730A
Dust Cover.....	Part #128-39
Hard Case .....	Part #185-334
Carrying Case .....	Part #185-331-P
1-1/2" Lens .....	Part #463-173
5" Lens .....	Part #463-174

### **6.1 Accessory Remote Speaker**

For better sound distribution, the accessory remote external speaker kit (438-388) with a 25 foot cord is available. The remote speaker kit attaches to the inside of the Micromatic II case (Figure 9). Insert the external speaker kit plug into the receptacle marked **SPEAKER** on the control panel. There are two positions in the receptacle for the speaker plug. In the first position, sound will be heard from the projector speaker and the external speaker. In the second position, sound will be heard only from the external speaker.



**FIGURE 9**

## **7 – CARE IN USE**

### **7.1 Maintenance**

**FILM:** Wipe the film with dry, lint-free cloth to remove any foreign particles.

**TAPEHEAD AND CAPSTAN:** Clean the tapehead and capstan with special head cleaning cassette available from your dealer.

**PRESSURE ROLLER:** To clean the pressure roller, use alcohol on a soft cloth or Q-Tip and wipe clean.

**NOTE:** The tapehead, pressure roller and capstan should be cleaned regularly.

**CAUTION:** Glass components may shatter. Cover glass parts with cloth. Protect eyes. Handle carefully.

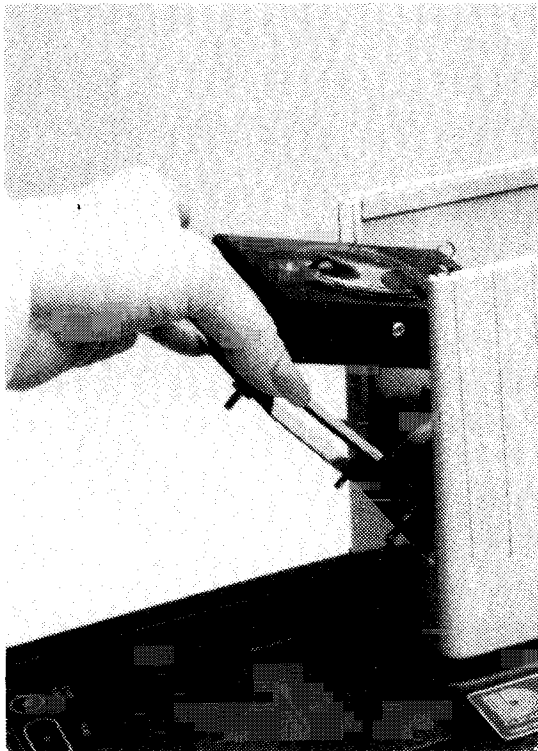
### **7.2 Lamp Replacement**

**WARNING:** Allow the lamp to cool before removing it.

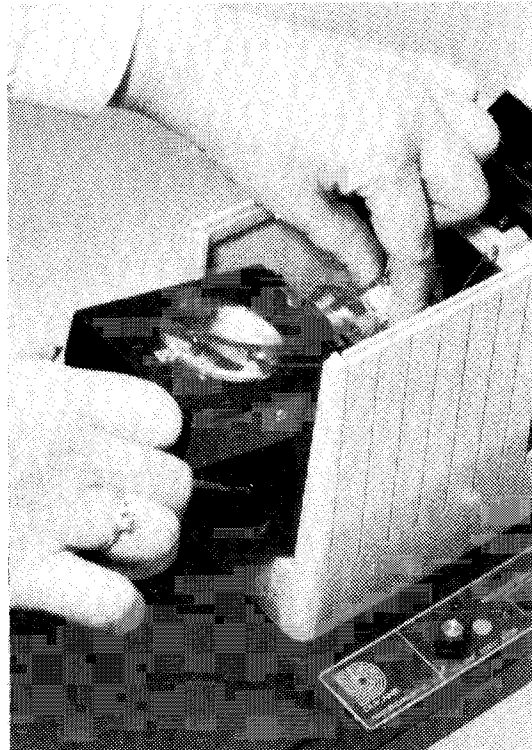
The 28A81C and 28A85C utilize a 300 watt FHS lamp, 70 hours life, rated at 82 VAC, Dukane Part #456-178.

1. Turn the unit such that the control panel faces you. **MAKE SURE THE UNIT IS UNPLUGGED FROM POWER SOURCE.**

2. Loosen the screw on the upper back of the projector, then pull back and lift the lamp housing grille from the projector.
3. Grasp condenser–lamp bracket and pivot about the hinge (Figure 10).
4. Release the retaining springs and flip away from the lamp.
5. Pull lamp from receptacle (Figure 11).
6. To replace lamp, push into receptacle until firmly seated making sure that the lamp is down against the metal finger stops and the front face is flat against the mounting bracket.
7. LOCK LAMP RETAINING SPRINGS IN PLACE.
8. Swing condenser–lamp bracket into place.
9. Replace the lamp housing grille.



**FIGURE 10**



**FIGURE 11**



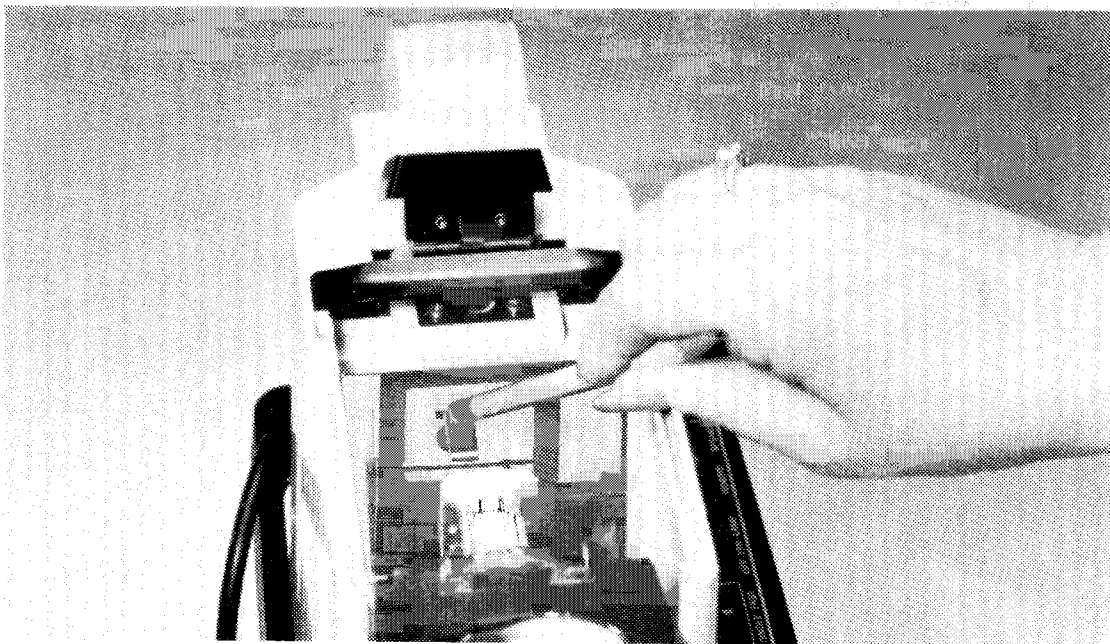
### 7.3 Projection Lens

**NOTE:** The 1-1/2" lens is for filmstrip use only. It cannot be used with slides.

The projection lens should be cleaned with lens tissue or clean cloth moistened with a drop of lens cleaner.

The projection lenses (1-1/2", 3", 5") are interchangeable to meet specific AV requirements. The lens lock must be released before changing lenses. To release the lens lock, remove the lamp housing grille. Turn the focus knob counterclockwise so that the projection lens is in the "out" position. Turn the focus knob back counterclockwise 1/2 turn.

Using the eraser end of a pencil, press down on the front part of the brass clip directly behind the projection lens (Figure 12). While applying pressure to the clip, turn the focus knob clockwise until the lens can be pulled out. To replace the projection lens, push down on the brass clip, put the lens back into position and turn the focus knob counterclockwise to lock it in place.



**FIGURE 12**

## 7.4 Condenser Optics

The condenser optics should be cleaned with a soft, clean brush. Smudges should be wiped off with lens tissue.

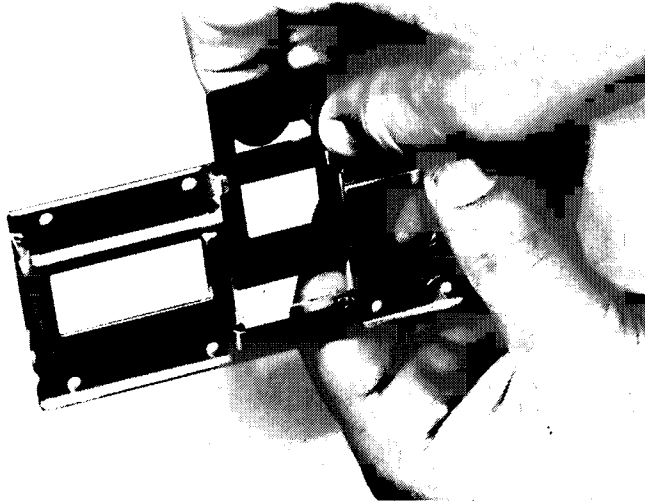
DO NOT remove the lenses from their holders; cleaning the exposed surfaces is sufficient.

## 7.5 Mirror

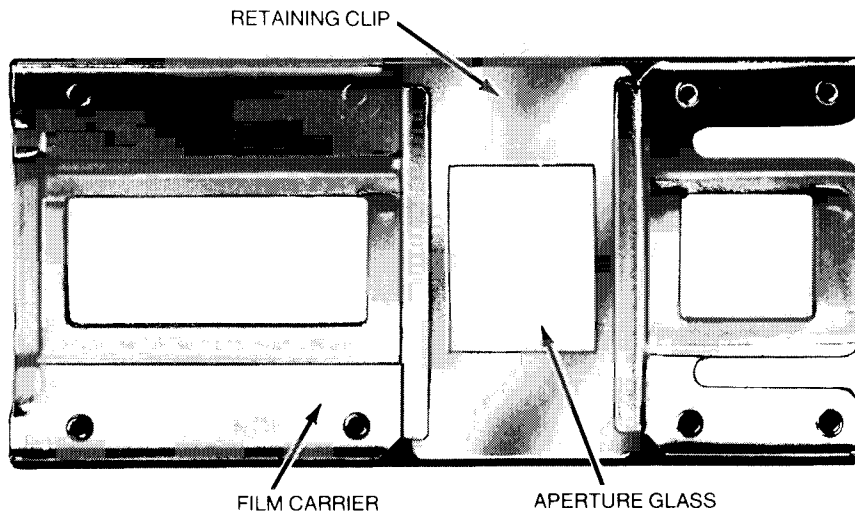
Use a very soft, lint-free cloth or soft brush. A good quality glass cleaner which leaves no film may be used to remove accumulated dust.

## 7.6 Filmstrip Carrier

The aperture glass in the filmstrip carrier can be removed for easy cleaning. To clean the aperture glass, pull the filmstrip carrier out of the filmstrip carrier slot (Figure 6). Remove aperture glass and retaining clips by sliding them out the side of the carrier (Figure 13). Clean the glass with lens paper and glass cleaner. Replace aperture glass so that the beveled edges of the glass face each other when in the carrier and then slide in retaining clips (Figure 14).



**FIGURE 13**



**FIGURE 14**

## **7.7 Storage**

1. Make sure no cassette control keys are pushed down.
2. All controls on the unit should be turned OFF.
3. The Micromatic II should be protected from dust as much as possible.

## **7.8 Information on Lamp Warranty**

Projection lamps are warranted by the lamp manufacturer and not by the equipment manufacturer. If you have a lamp which you believe to be defective, contact the manufacturer of that particular lamp for the appropriate warranty replacement.

General Electric Company  
1501 South 19th Street  
Mattoon, Illinois 61938

Thorn Lighting  
23 Leslie Court  
Whippany, New Jersey 07981

North American Philips  
Bank Street  
Heightstown, New Jersey 08520

## **8 – SERVICING**

### **8.1 Shipping Information**

If it becomes necessary to return a unit, please use the original packing material or pack securely to insure safe shipment.

### **8.2 Service**

Service and parts are available from any Dukane Approved Service Station or the A-V Service Department, c/o Dukane Corporation. Service manuals are also available at a nominal cost.

### **8.3 To Receive No Charge In-Warranty Repairs**

1. Equipment must be taken to Dukane Approved Service Station (see service station list).
2. Proof of purchase must be presented when requesting warranty service.
3. If any difficulty is encountered, please contact:

Dukane Corporation  
A-V Service Department  
2900 Dukane Drive  
St. Charles, Illinois 60174  
Phone: 708-584-2300  
FAX: 708-584-5156

Please provide your model number and serial number in any communication.

Dukane Corporation will not be liable for any expense incurred because of failure to present proof of purchase, pick-up and delivery charges, service calls, or if service is supplied by other than Dukane Approved Service Station.

## 9 – ELECTRICAL SAFETY GROUNDING INSTRUCTIONS

The power cords used on all Dukane products are equipped with a three-prong, ground-type plug for your safety. Whenever a two-prong receptacle is encountered, we strongly recommend that it be replaced with a properly grounded three-prong receptacle by a qualified electrician in accordance with the National Electrical Code and local codes and ordinances. See Figure A.

THREE-PRONG  
GROUNDING PLUG  
POWER SUPPLY CORD



APPROVED  
GROUNDING TYPE  
WALL RECEPTACLES  
PASS & SEYMOUR  
NO 5261 OR  
BRYANT NO 5261  
(NEMA NO 5-15R)  
OR EQUIVALENT

**FIGURE A**  
**120 Volt Grounded Plug and Adaptor**

For your safety and for the safety of others, **if there is any question** as to whether or not the receptacle is properly grounded, **have it checked** by a qualified electrician.

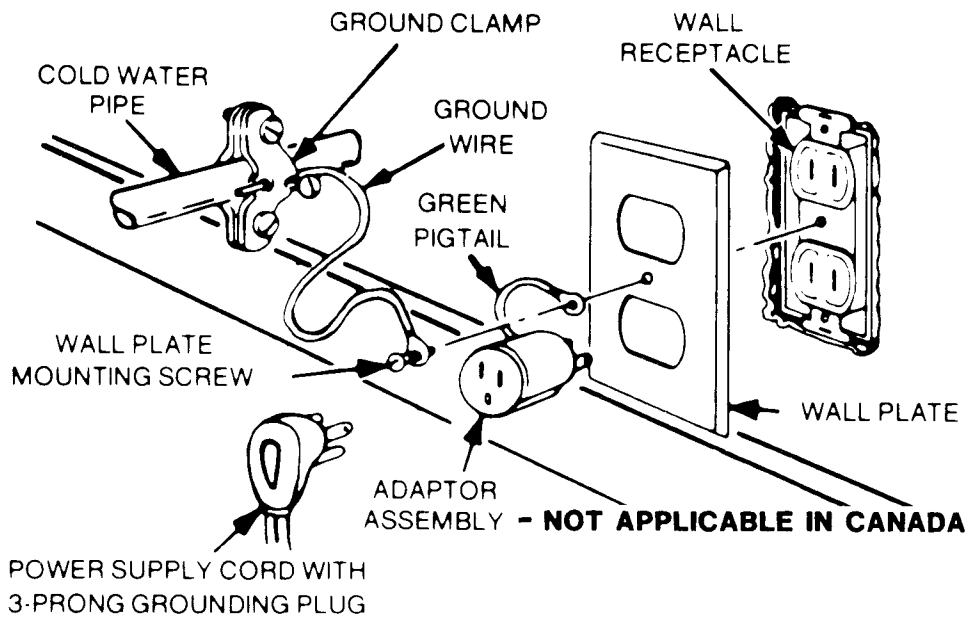
**Do not cut off the power cord grounding prong or alter the plug in any way.**

**Do not use a two-wire extension cord with this product.** When it is necessary to use an extension cord, be sure that it is a **three-wire cord**, that it is in good condition, and that it is large enough to do the job safely and efficiently. It, too, must be plugged into a grounded receptacle.

If changing the wall receptacle to an approved grounding type is not possible, and where local codes permit, an adaptor may be used to connect the three-prong grounding plug to a two-prong receptacle.

However, the green **pigtail must be connected to ground.** If the receptacle is grounded, the pigtail may be connected to the receptacle. If the

receptacle is not grounded, connect a separate #18 gauge ground wire from the receptacle nearest available effectively grounded metal pipe or equivalent grounding electrode. See Figure B.



**FIGURE B**  
**120 Volt Grounded Adaptor**

**- NOTES -**

# **ONE-YEAR LIMITED WARRANTY**

This Dukane audio visual product is warranted to the original purchaser for a period of one (1) year from the original purchase date -- in normal use and service -- against defects in material and workmanship. DUKANE CORPORATION EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

During the warranty period, Dukane Corporation will repair or replace (at the Manufacturer's option) any such defective parts (except for lamps, which are subject to whatever warranties the manufacturer may provide) without charge to the purchaser for parts or labor when the product is returned, prepaid and insured, with proof of purchase date. This remedy of repair or replacement is exclusive of all other remedies that the purchaser may have. This exclusive remedy is void if the product has been damaged by accident or unreasonable use, neglect, or improper service or other causes not arising out of defects in material or workmanship.

Dukane Corporation disclaims all liability for incidental or consequential damages of any kind, including all damages arising out of any interruptions in operation of the product and all damages to software.

No person, firm or representative is authorized to assume any obligation or make any warranty on behalf of the Dukane Corporation other than as stated above.

**THIS LIMITED WARRANTY IS VALID FOR U.S.A. AND CANADA.  
FOR OTHER LOCATIONS, LOCAL WARRANTIES APPLY.**

Audio Visual

---

Dukane Corporation  
Audio Visual Division  
2900 Dukane Drive  
St. Charles, IL 60174  
Phone: (708) 584-2300  
Fax: (708) 584-5156

**DUKANE**