How to Use the *KODAK EKTAGRAPHIC* CT1000 16 mm Projector

INTRODUCTION

Continuing the traditional Kodak features of clear, bright images, and gentle, positive film handling, the *KODAK EKTAGRAPHIC* CT1000 16 mm Projector also brings you

Channel Threading—Threading film through the projector is fast and simple.

Easy Review and Rewind—Turn just one control.

Convenience—Easy setup, a built-in speaker, and a padded carrying handle, all in a compact and self-contained unit, make this projector convenient to use and store.

Before you start to use your new projector, be sure you read and understand these basic safety precautions:

IMPORTANT SAFEGUARDS

1. Read and understand all instructions.
2. Maintain close supervision when the projector is used by anyone not fully acquainted with correct operating procedures.
3. Take special care to avoid burns that can result from touching hot parts. Allow the projector to cool before replacing a lamp or cleaning lenses.
4. Do not operate this projector with a damaged cord. If the unit has been dropped or damaged, have it examined by a qualified service representative before using it again.
5. Be careful to place all cords where you or others will not trip over them.
6. If an extension cord is necessary, use a 3-wire grounding-type cord with a minimum 5-ampere current rating. (Cords rated for less amperage may overheat.) Be sure to plug the power cord into a permanent, properly installed 3-wire power receptacle.
7. Never yank the cord to pull the plug from the outlet. Grasp the plug and pull it to disconnect it.
8. Do not disassemble this projector beyond the extent necessary to perform the routine maintenance procedures described in this manual. If further disassembly is required, take the projector to a qualified service representative, since incorrect reassembly can cause electric shock hazard.

MAJOR PARTS AND CONTROLS

For your convenience, leave this page open so that you can refer to this figure while reading the sequential operating instructions.

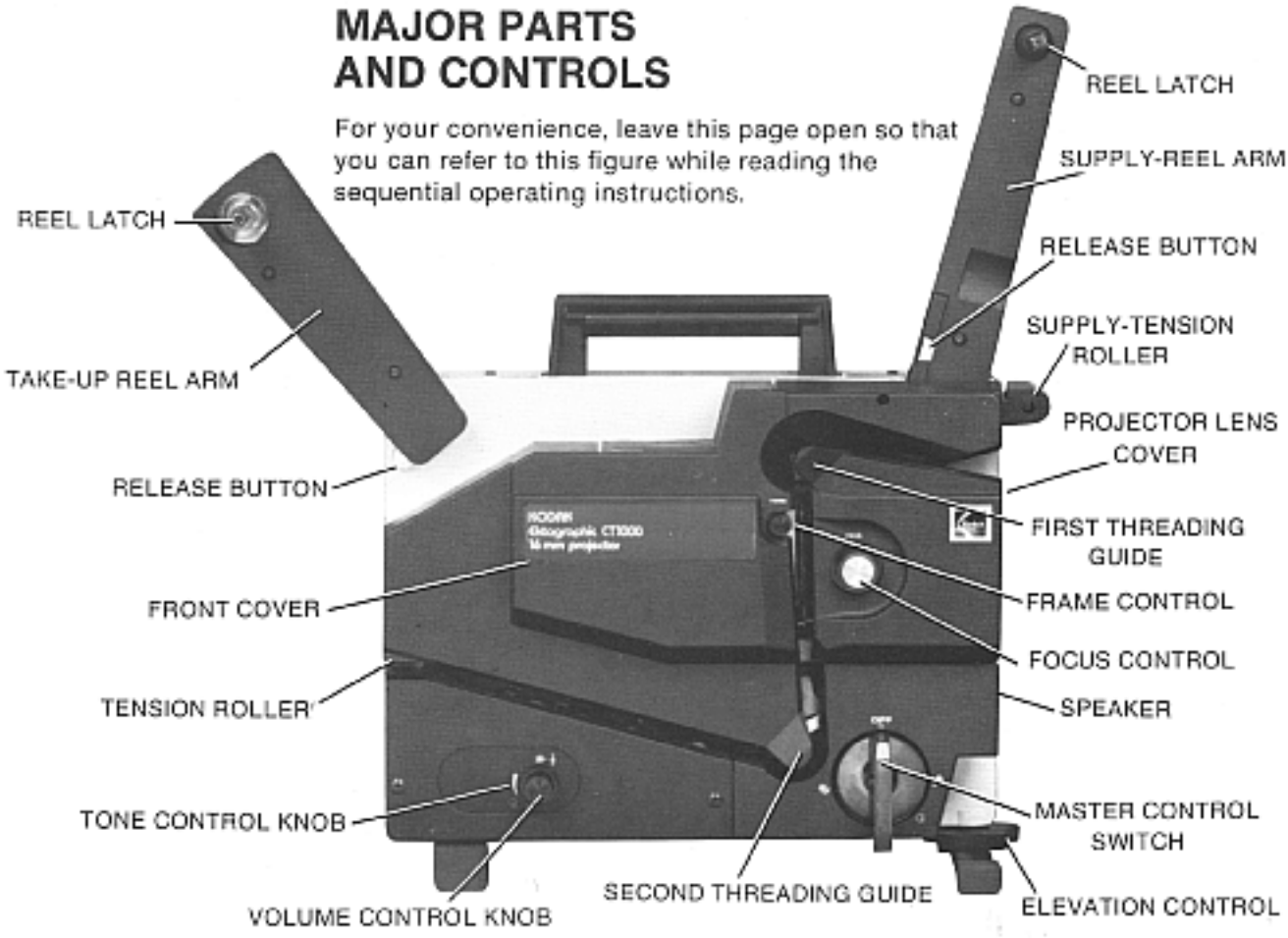

Figure 1

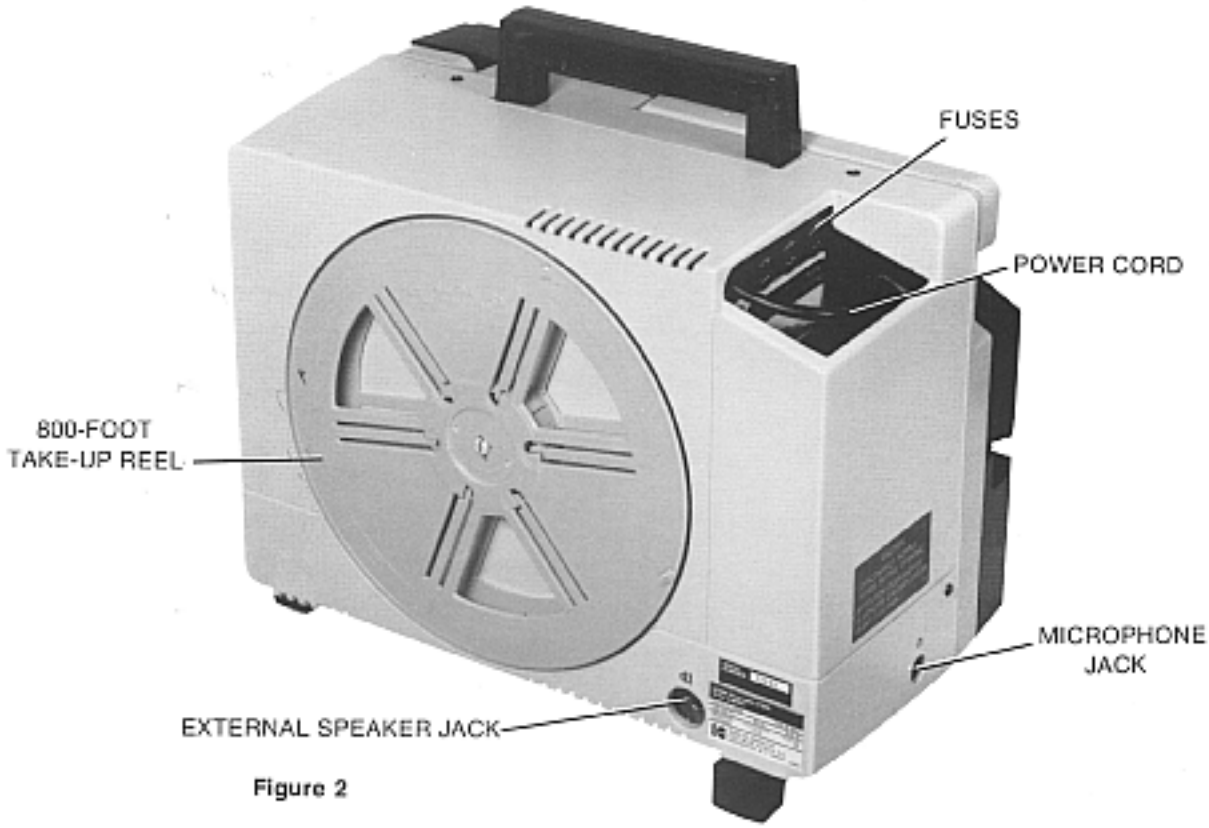

Figure 2

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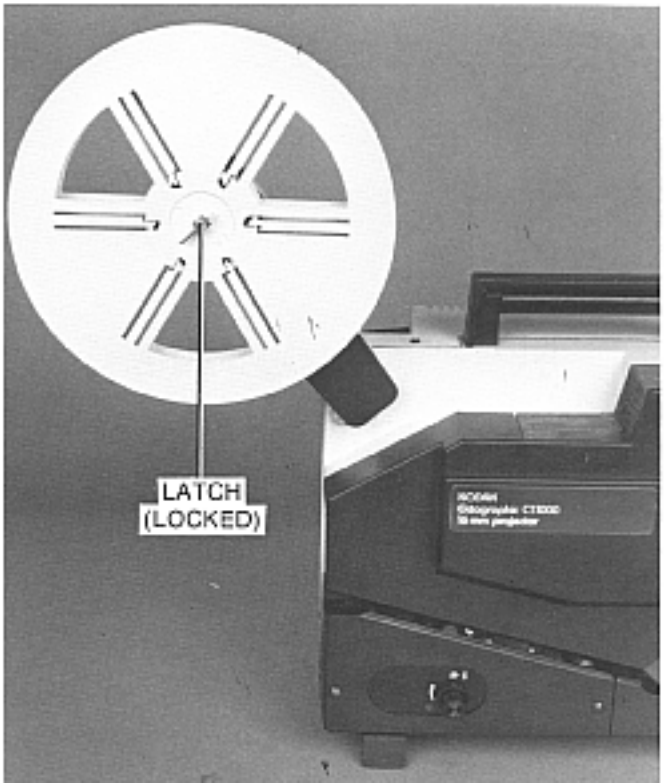
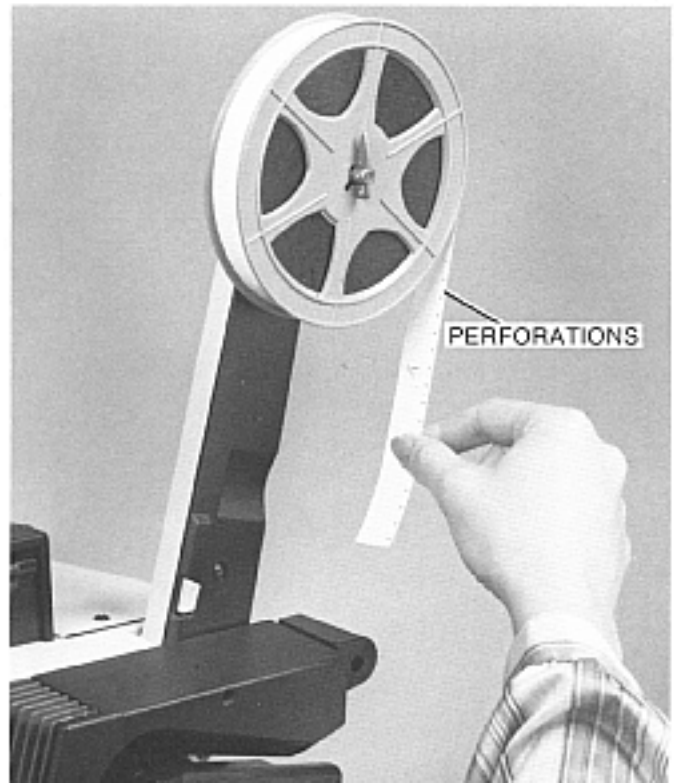
SEQUENTIAL OPERATING INSTRUCTIONS

Preparation

1. Put the projector on a sturdy support, pointing at the center of the projection screen. Remove the protective dust cover.
2. Check that the master control switch (see Figure 1) is in the OFF position, then plug the power cord into a grounded 110- to 125-volt 60 Hz receptacle.
3. Raise the supply-reel arm and the take-up reel arm up to the operating position. They will lock in place.
4. Open the reel latch on the take-up reel arm to the unlocked position. Be sure the take-up reel is as big as, or bigger than, the supply reel. Put the take-up reel on the spindle and move the latch to the locked position. See Figure 3.
5. Open the latch on the supply-reel arm and put the supply reel on the spindle with the film coming off to the right of the reel, film perforations as shown in Figure 4. Move the latch to the locked position.





Threading the Projector

1. Holding the film leader near the end, pull it under the supply-tension roller (see Figure 5), around the first threading guide (Figure 6), around the second threading guide (Figure 7), and under the tension roller (Figure 8).
2. Attach the leader to the take-up reel—If you are using the 800-foot reel supplied with the projector, it is not necessary to put the leader in a slot in the take-up reel hub, or tape the leader to the hub; just wind the leader onto the take-up reel, as shown in Figure 9. Then manually turn the take-up reel through two or three clockwise revolutions to take up any slack in the film.

Figure 5

Figure 6

Figure 7

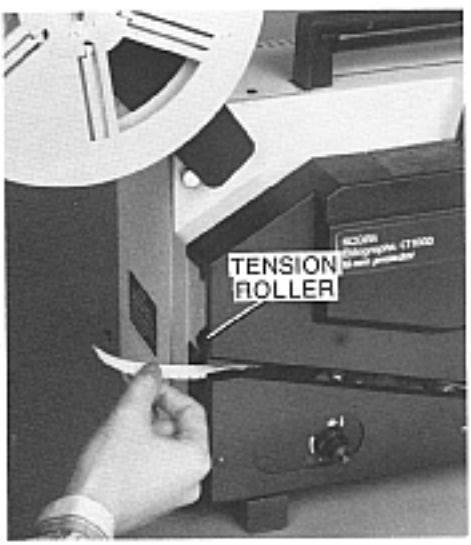


Figure 8


Figure 9

Projection

1. Turn the master control switch (see Figure 1) clockwise through (forward) to (lamp).
2. Adjust focus with the focus control (see Figure 1). If a frame line appears on the screen image, adjust the frame control (see Figure 1) until the frame line disappears. Adjust the elevation control (see Figure 1) as desired.
3. Wait for the first scene to come on the screen, then turn up the amplifier by turning the volume control (see Figure 10) clockwise. Adjust volume and tone by turning the controls clockwise or counterclockwise.

Review

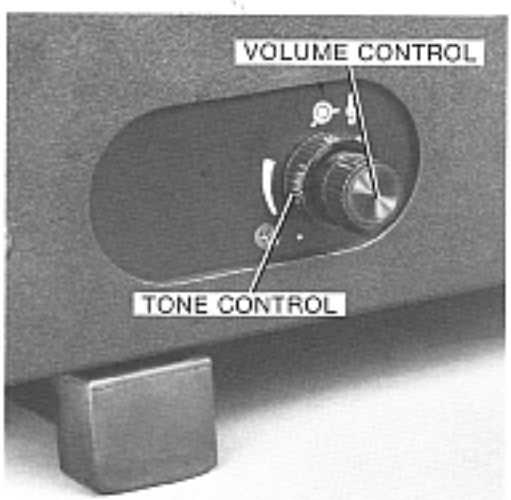
If you want to see a portion of the film again, turn the master control switch counterclockwise from through to OFF and then to . When the portion you want to see again has been rewound onto the supply reel, turn the master control switch clockwise to OFF. Pause very briefly at OFF, and then continue turning the control switch clockwise through to .

After the Show

1. Turn the master control switch counterclockwise to OFF. Turn the exciter lamp off by turning the volume control counterclockwise until it clicks.
2. If the tail end of the film is still attached to the supply reel, you can quickly rewind the film by turning the master control switch counterclockwise to . When the film is completely rewound onto the supply reel, turn the master control switch clockwise to OFF. Go to step 5.
3. If the tail end of the film has come off the supply reel, turn the take-up reel clockwise by hand until all the film is on the take-up reel. Then attach the tail end to the supply reel hub as shown in Figure 11. Often the tail end is threaded into a slot in the hub, but it may instead be fastened with a small piece of tape, or simply wound onto the hub and kept there by winding more film over it.
4. Turn the master control switch counterclockwise to . When the film is completely rewound onto the supply reel, turn the master control switch clockwise to OFF.
5. Unlatch the supply reel and take it off the projector. Handle it carefully so you don't spill the film off the reel. Put the reel of film in its container.

Storing the Projector

1. Unlatch and remove the take-up reel. If you are using the 800-foot reel supplied with the projector, snap the reel over the retaining pin in the reel-storage compartment in the back of the projector.
2. Push the arm release buttons and turn the reel arms to their storage position. (An accessory lens or lens attachment, such as the *KODAK EKTAGRAPHIC* CT Bifocal Converter, may keep the supply-reel arm from returning fully to its storage position.) Snap the reel latches to the locked position.
3. Check that the elevation foot is retracted all the way. (Turn the elevation control, Figure 1, to the left.) Take hold of the power cord plug and pull it out of the receptacle. (*Do not* unplug the projector by pulling on the power cord.) Put the cord in its storage compartment.
4. Put the dust cover over the projector. Along one side of the cover is a convenient pouch for storing brushes, extra reels, and this manual.



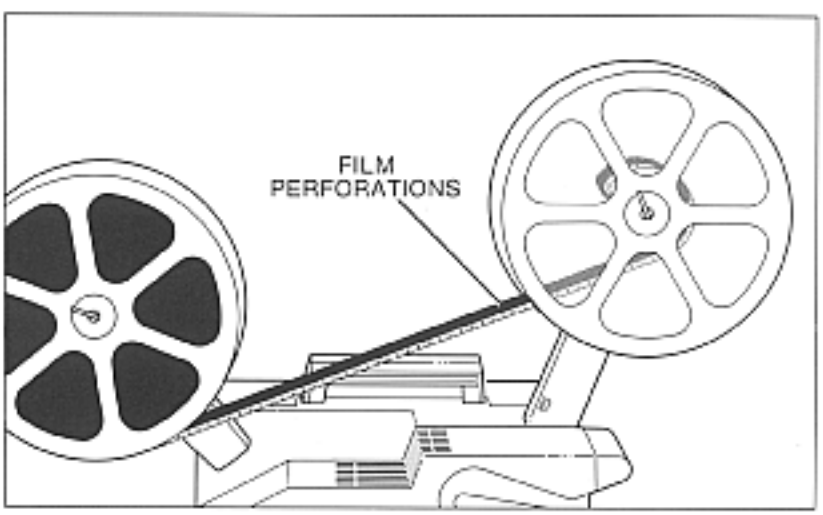


Figure 10

High-Normal Lamp Switch

With this switch in the HIGH position, the projection lamp delivers maximum brightness. When this switch is in the NORMAL position, projection lamp brightness is reduced by approximately 20 percent, but lamp life is extended by approximately 240 percent, from 50 to 120 hours. (See SPECIFICATIONS on the inside back cover.) The high-normal lamp switch is under the front cover, above the exciter lamp. See Figure 27 on page 8.

External Speaker Jack

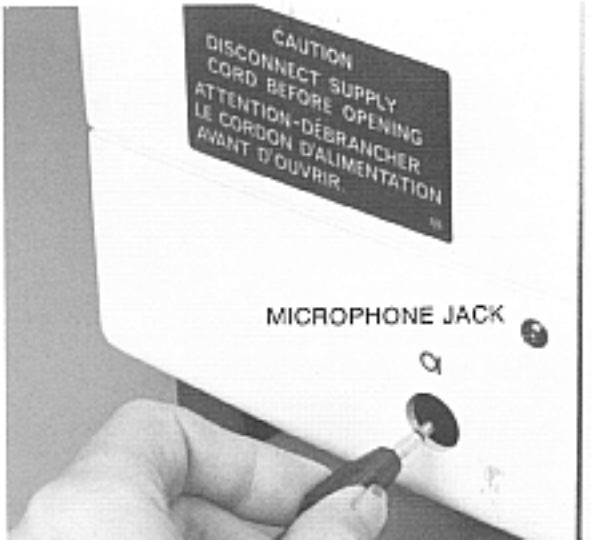
When you have a large audience, or a high level of noise to overcome, you may want to use an external speaker. Plugging an external speaker into this jack (see Figure 12) automatically shuts off the built-in speaker. See SPECIFICATIONS on the inside back cover.

Microphone Jack

You can use this projector as a public address system if you choose, by plugging a suitable microphone (see SPECIFICATIONS on the inside back cover) into the projector, plugging the projector into 110- to 125-volt 60 Hz source, and turning the amplifier volume up. (See Figure 10 on page 3.) It is not necessary that the projector be running in forward, although it can be.

It *is* necessary that the microphone have a straight plug (see Figure 13) rather than a right-angle one, because the tip of the plug must extend approximately 1¼ inches inside the surface of the projector.

Since plugging the microphone into the jack disconnects the input from the film's sound track, you can use the microphone to provide your own commentary or narration while a film is being projected. Unplugging the microphone restores the connection between sound track input and the projector amplifier.



TAKING CARE OF THE PROJECTOR

Access

Cleaning the projector components and replacing the projection and exciter lamps requires removal of the projector lens cover or the front cover, as described below.

> **NOTE:** Normal operation and care do *not* require the removal of the *back* (gray) cover of the projector.

Removing and Replacing the Projector Lens Cover

To remove, grasp cover as shown in Figure 14 and pull top first.

To replace, put the bottom of the cover between the guides, as shown in Figure 15, and gently push the top of the cover until it snaps into place.

Removing and Replacing the Front Cover

To remove, grasp cover as shown in Figure 16, and gently pull it off.

To replace, rest the left guide pin in its hole as shown in Figure 17, then align the right guide pin with its hole and the frame control notch around the frame control as shown in Figure 18. Push gently on the cover until it snaps into place.

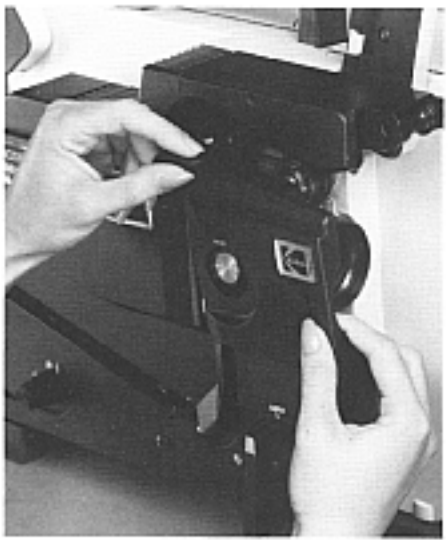


Figure 14

Figure 15

Figure 16

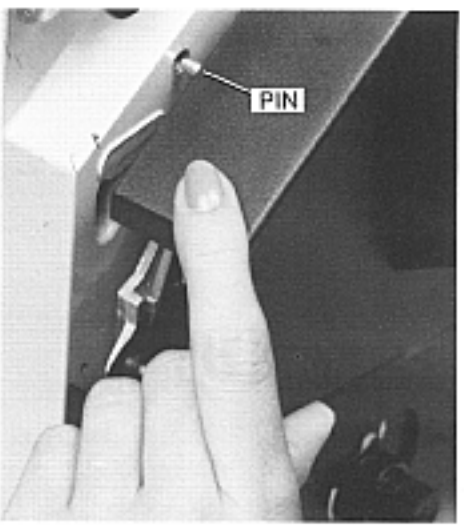


Figure 17

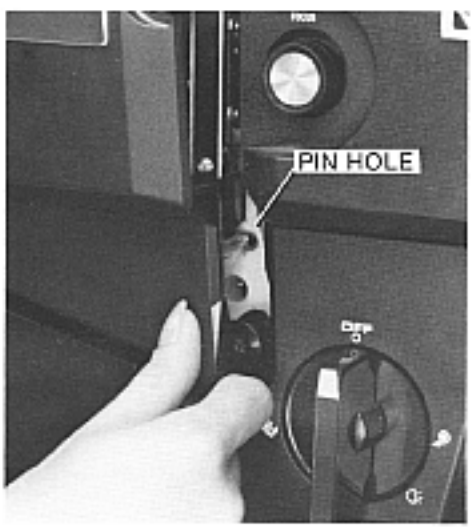


Figure 18

Cleaning the Film Gate, Film Path, and Sound Optics

Clean the film gate whenever the screen image shows moving hairs or dust. This will depend upon how clean the films are before they are projected.

The entire film path should be inspected and cleaned whenever you have to replace a projection or exciter lamp, perhaps more often if the films being projected are dusty or dirty.

Cleaning the Film Gate

1. Remove all film from the film path.
2. Turn the master control switch to OFF, and turn down the amplifier volume control until it "clicks."
3. Remove the projector lens cover, as described on page 5.
4. Hold the film gate pressure pad with your left hand, as shown in Figure 19, and pull the pressure pad out. When the projector is new and the spring is stiff, it may be necessary to pull firmly.
5. Use the small plastic brush with the stiff black bristles—supplied with the projector—to clean the film channel area of the pressure pad, and then wipe the entire pad with a lint-free cloth.
6. Use the wire-handled brush with white bristles—supplied with the projector—to clean the aperture and mask and rear of the projector lens, as shown in Figure 21.
7. Put the bottom pressure pad guide pin into the bottom slot as shown in Figure 22, and then gently push the top pin all the way into its slot.
8. Replace the projector lens cover, as described on page 5.

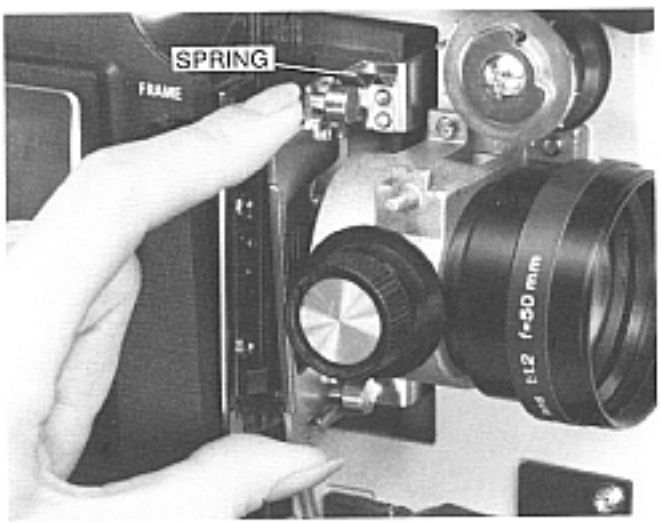


Figure 19

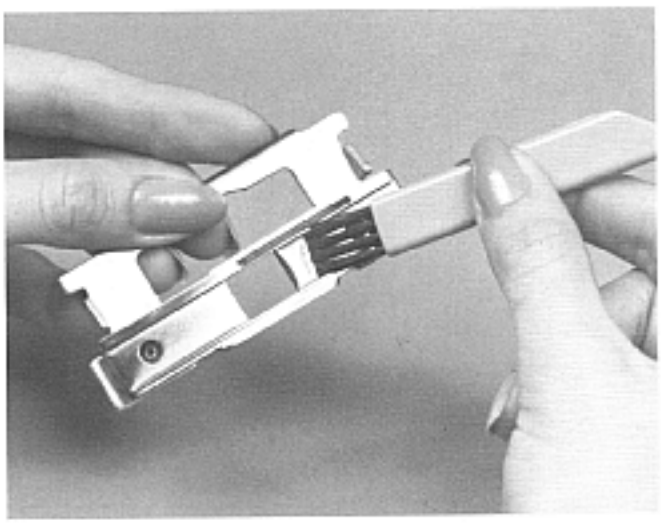


Figure 20

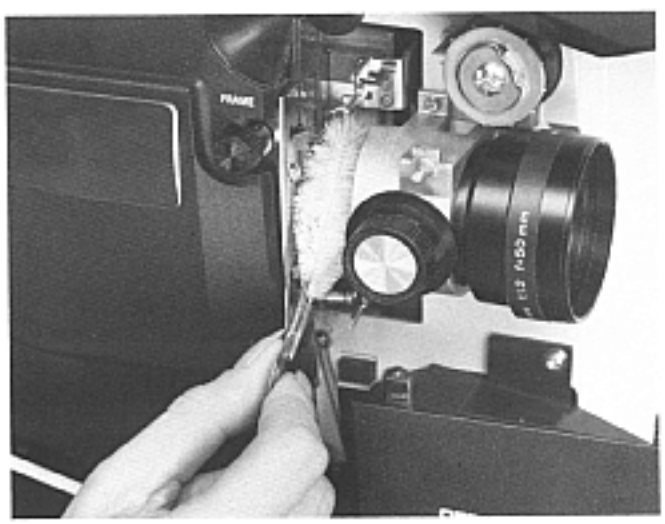


Figure 21

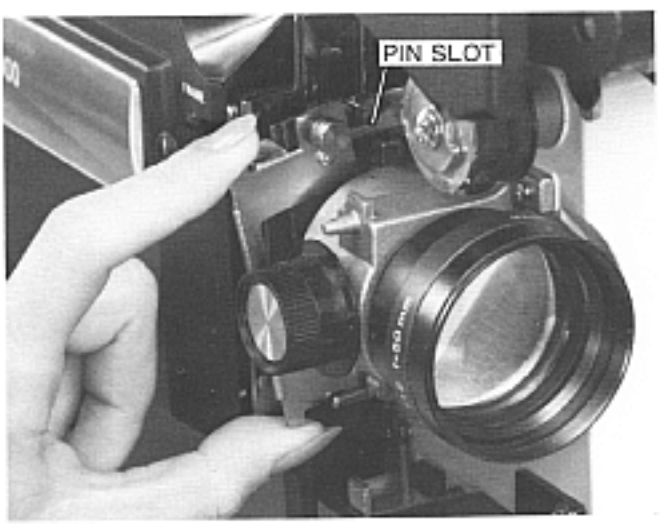


Figure 22

Cleaning the Film Path and Sound Optics

1. Remove and clean the pressure pad, as described in steps 1 through 7 on page 6.
2. Remove the front cover, as described on page 5.
3. Use the wire-handled brush with white bristles—supplied with the projector—to clean the rollers, capstan, sprockets, sound optics, and solar cell as shown in Figure 23. Keep the brush itself clean with canned air or another brush.
4. Replace the projector lens cover and front cover, as described on page 5.

Cleaning the Projector Lens

1. Raise the supply-reel arm to the operating position. Then remove the projector lens cover, as described on page 5.
2. Pull the focus-control knob away from the projector and slip the lens out of its housing as shown in Figure 24.
3. It is not necessary to disassemble the lens. Clean the glass surfaces with a soft lint-free cloth, *KODAK* Lens Cleaning Paper, or equivalent. If moisture is required, use a drop of *KODAK* Lens Cleaner or breathe on the lens. Do not use a wet cloth or treated paper or cloth—they could harm the coating on the lens surface.
4. Clean the lens barrel with a brush or cloth.
5. Replace the lens by pulling on the focus-control knob and sliding the lens back into its housing.
   Move the lens in and out until you hear the pin on the focus control click into the groove in the lens barrel. Turn the focus-control knob and check that the lens moves back and forth.
6. Replace the projector lens cover, as described on page 5.

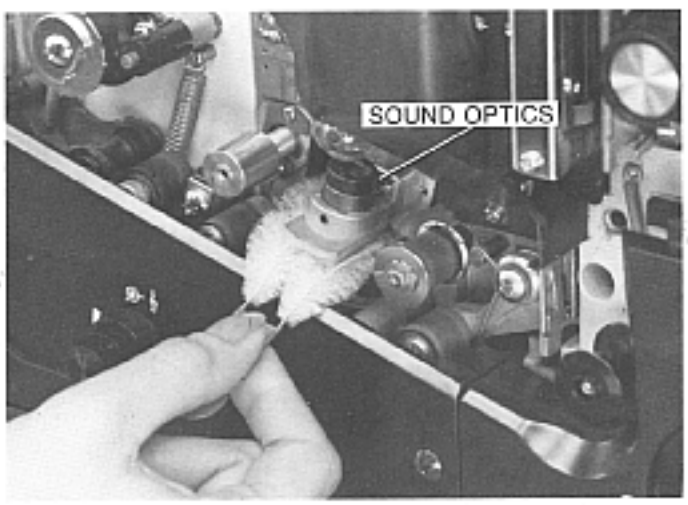


Figure 23

Figure 24

Figure 25

Replacing the Projection Lamp

1. Unplug the projector! See Figure 26.
2. Remove the front cover, as described on page 5.
3. Gently touch the housing covering the projection lamp. If it is hot, wait for it to cool.
4. Using a flat-blade screwdriver, loosen the lamp cover retaining screw (under the high-normal lamp switch) until the cover can be removed easily. See Figure 27.
5. Remove the cover, being careful not to damage the exciter lamp.
6. Be careful not to burn yourself on the projection lamp! Move the lamp out of its socket by pushing the ejector to the left, as shown in Figure 28, then slide the lamp out from under its retaining springs.
7. Be careful not to touch the small bulb or the inside reflective surface of the lamp; hold the new projection lamp so the pins line up with the socket, and slide the lamp between the holder and the retaining springs, as shown in Figure 29.

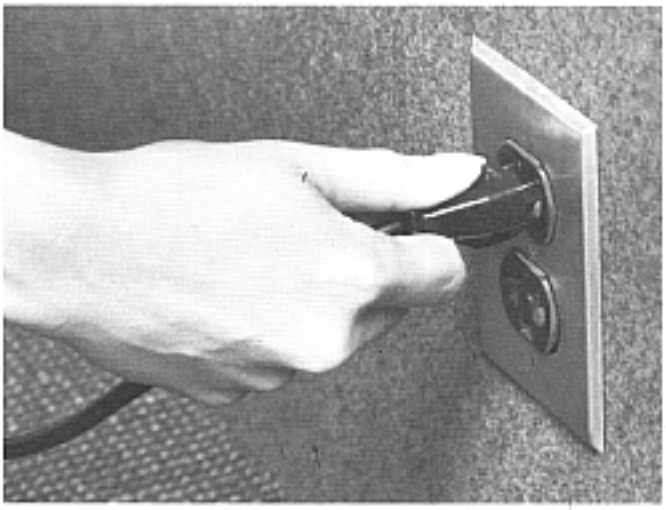


Figure 26

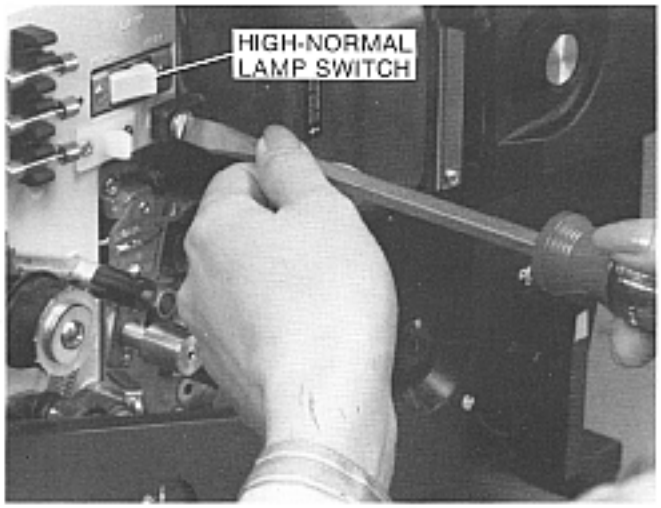


Figure 27

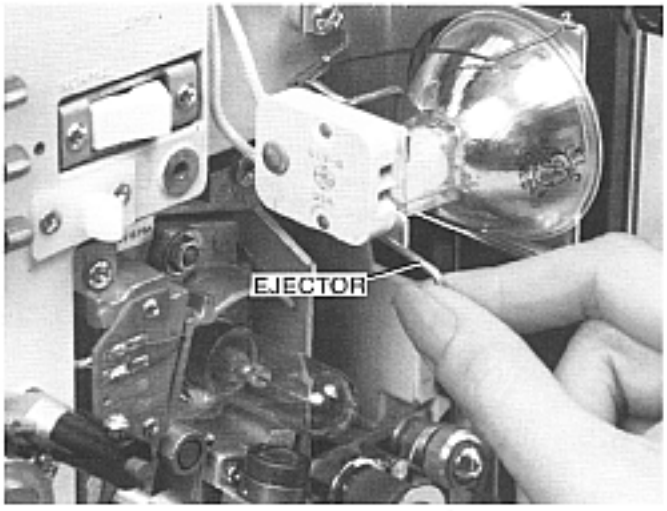


Figure 28

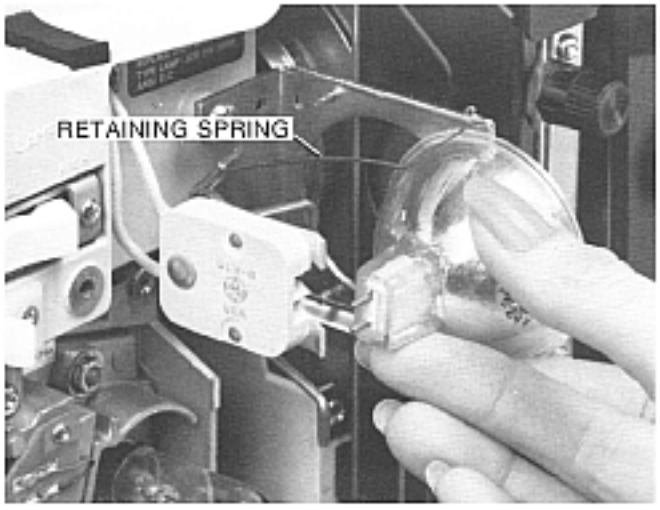


Figure 29

8. Push the base of the lamp into the socket until the lamp is stopped by the retaining pins, as shown in Figure 30. It is important that the lamp is firmly in its socket—otherwise, lamp performance may suffer, and the lamp and socket may overheat.

9. Be careful to not damage the exciter lamp when replacing the projection lamp cover. It will probably be easier if you put the guide at the bottom of the cover into the projector frame, as shown in Figure 31.

   Then gently work the cover up against the projector frame, fitting the pin near the top of the cover into its hole in the projector frame. Tighten the retaining screw with the screwdriver until it holds the lamp cover firmly onto the projector.

10. Replace the front cover, as described on page 5.

    NOTE: There is a convenient spare-lamp storage area, with retaining spring, inside the front cover, as shown in Figure 32.

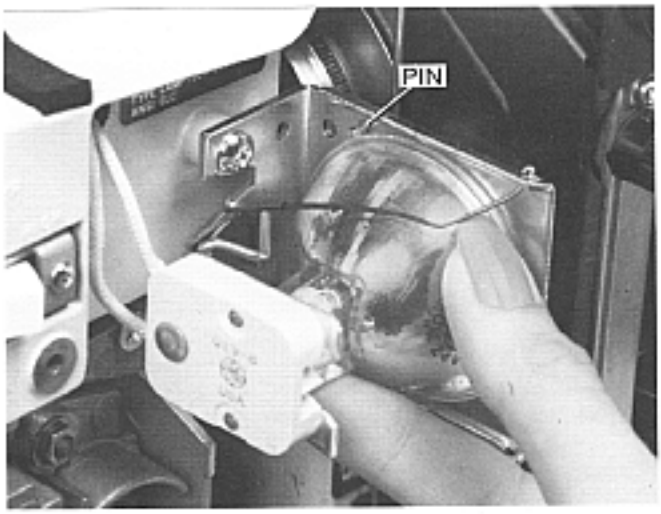


Figure 30

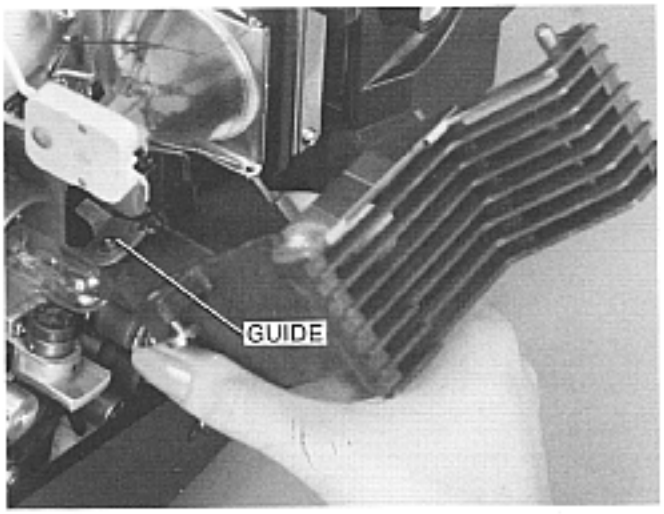


Figure 31

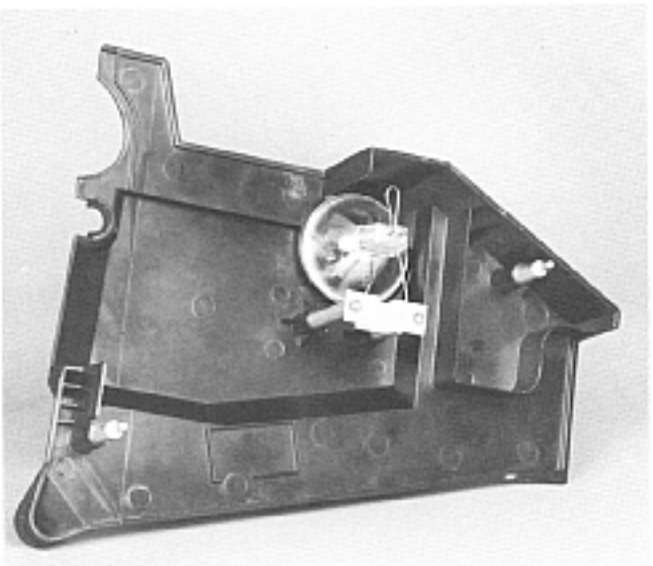


Figure 32

Replacing the Exciter Lamp

1. Unplug the projector!
2. Remove the front cover, as described on page 5.
3. Be sure the lamp is cool, then remove it by turning it counterclockwise (see Figure 33) until it is released from the three pins in its socket, and working it out of the recessed socket.
4. Hold the new exciter lamp (ANSI Code BRK) so that the notch on its base flange is in approximately the 1 o'clock position, as shown in Figure 34. Gently work the lamp base over the three pins in the socket, push the lamp base flat against the bottom of the socket, and turn the lamp clockwise until it locks in place.
5. Replace the front cover, as described on page 5.

NOTE: Spare BRK lamps can be purchased in individual boxes. The bottom of the cord storage compartment makes a convenient place to store a spare lamp in its box. A piece of tape will keep it there until you want it. See Figure 35.

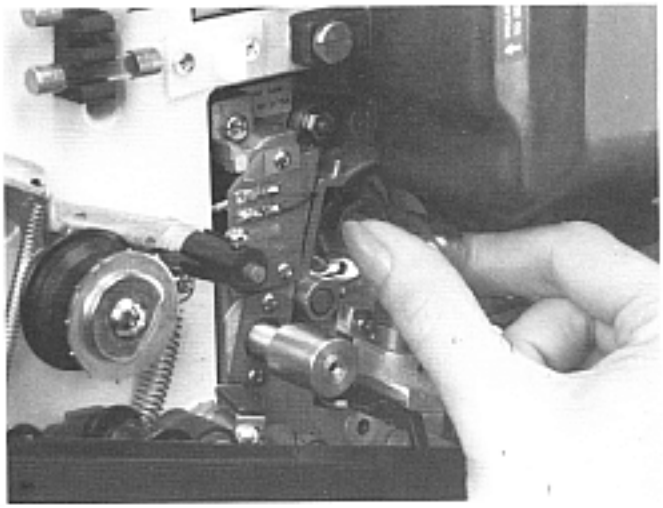


Figure 33

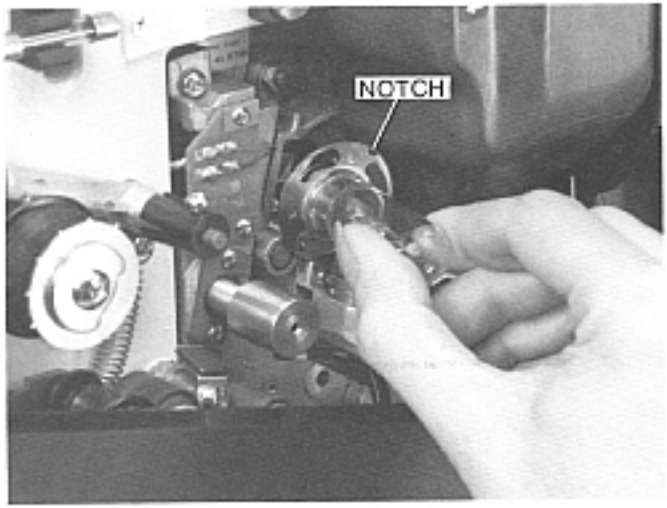


Figure 34

Replacing Fuses

NOTE: There are spare fuses under the front cover, as shown in Figure 27. You may want to read HAVING PROBLEMS? on page 12, for indications of a possible blown fuse.

1. Unplug the projector!
2. Loosen the fuse holder by turning it counterclockwise with a Phillips screwdriver, then take the holder in your fingertips and pull it out of the projector. Check the fuse filament for a break.
3. If the fuse is open (break in filament, see Figure 36), replace it with one of the same amperage rating. Using a fuse with a higher amperage rating may allow damage to the projector.
4. Put the fuse holder back in the projector and tighten with the screwdriver.
5. Correct the condition that caused the fuse to open. If you cannot find the condition and the replacement fuse also opens, have the projector examined by a qualified technician.

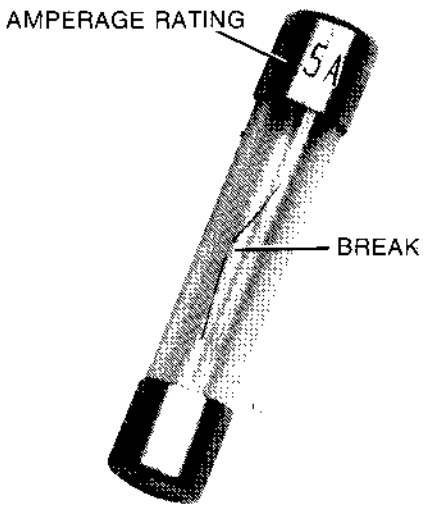


Figure 36

HAVING PROBLEMS?

If The motor will not turn on,

Then Is the projector properly plugged into a "live" receptacle?

Is main control switch on , , or ?

Check the main fuse.

If The projection lamp will not light,

Then Is there power to the projector? (See "The motor will not turn on" above.)

Is main control switch on ?

Check that projection lamp is properly seated in its socket.

Check the projection lamp filament.

If There is no sound from the speaker,

Then Is there power to the projector? (See "The motor will not turn on," above.)

Is there a microphone plugged into the microphone jack?

Does the exciter lamp come on when the amplifier volume is turned up? Check the exciter lamp filament (see page 10) and the exciter lamp fuse (see page 11).

Check the amplifier fuse (see page 11).

If Sound quality is poor,

Then Check that the optical sound track on the film is not dirty or scratched.

Clean the sound optics (see page 7).

If Image quality is poor,

Then Check that the film is not dirty or scratched.

Clean the projection lens (see page 7).

If You cannot properly focus the image,

Then Check that the projection lens is properly installed (see page 7).

If The picture is jerky and the projector chatters,

Then The loop restorer may be operating continuously. Turn the main control switch to OFF, pause briefly, and turn it back through to .

Check the film for damaged perforations.

ACCESSORIES

These products, for use with the *KODAK EKTAGRAPHIC* CT1000 16 mm Projector, are available through dealers in Kodak audiovisual equipment.

***KODAK EKTAGRAPHIC* CT Bifocal Converter,** converts a 50 mm projection lens to a 40 mm and a 63 mm lens, making it more convenient to fit the image size to the screen size without moving the projector.

***KODAK* Projection *EKTAGRAPHIC* Lens, 50 mm f/1.2.** Same as lens furnished with projector.

ELC Projection Lamp, 24 volts, 250 watts, 50 hours average life

EJL Projection Lamp, 24 volts, 200 watts, 50 hours average life

BRK Exciter Lamp, 4 volts, 0.75 amperes, 50 hours average life

KODAK PUBLICATIONS

The Communicator's Catalog from Kodak (*KODAK* Publication No. S-4) contains detailed descriptions of and ordering instructions for over 250 Kodak publications on topics of interest to those producing and presenting audiovisual programs. The contents of *The Communicator's Catalog* range from the *Film Technology Packet* (*KODAK* Publication No. H-300), $49.95, which covers the finances, aesthetics, and mechanics of making motion pictures, to *Audiovisual Projection* (*KODAK* Publication No. S-3) which is concise, specific, and free (single copies). In addition, *The Communicator's Catalog* includes movie and slide-tape programs on equipment use and applications. Some of these programs are available for rental only, but many are offered for both rental and sale.

Request your free copy of *The Communicator's Catalog from Kodak* from Eastman Kodak Company, Dept. 412L, 343 State St., Rochester, NY 14650. Please include both the title and the publication number (S-4) in your request.

You can order a service manual for the *KODAK EKTAGRAPHIC* CT1000 16 mm Projector (*KODAK* Publication No. S-81-2, approximately $15 plus handling charge) and a parts price list (no charge) from Eastman Kodak Company, Dept. 625, 343 State Street, Rochester, NY 14650.

Prices are subject to change without notice.

SPECIFICATIONS

Approximate Weight:

Projector in dust cover—34 lb (16 kg)
Projector packaged for shipping 40 lb (18 kg)

Elevation:

Approximately 2.5 in. (64 mm), 12.5°, upward tilt.

Power Required:
110 to 125 V ac, 60 Hz, 4 A.

Power Consumed by Projector and Amplifier on 120 V, 60 Hz Power line: 400 watts when used with ANSI Code ELC, 250-watt, projection lamp.

Power Cord: Attached, approximately 8 ft (2.5 m), terminating in molded 3-prong plug.

Projection Lens: *KODAK* Projection *EKTAGRAPHIC* Lens, 50 mm f/1.2

Projection Lamp: ANSI Code ELC lamp is supplied. It is a 24 V ac, 250 W, halogen lamp rated for 50 hours average life at the high setting, approximately 120 hours average life at the normal setting.

Amplifier: Rated continuous average sine-wave power of 10 watts into an 8-ohm load (internal or external speaker) at a total harmonic distortion of 5% maximum throughout a bandwidth of at least 50 Hz to 7 kHz, when measured with an rms 120 V ac 60 Hz power input.

Sensitivity: 7.40 mV microphone input.

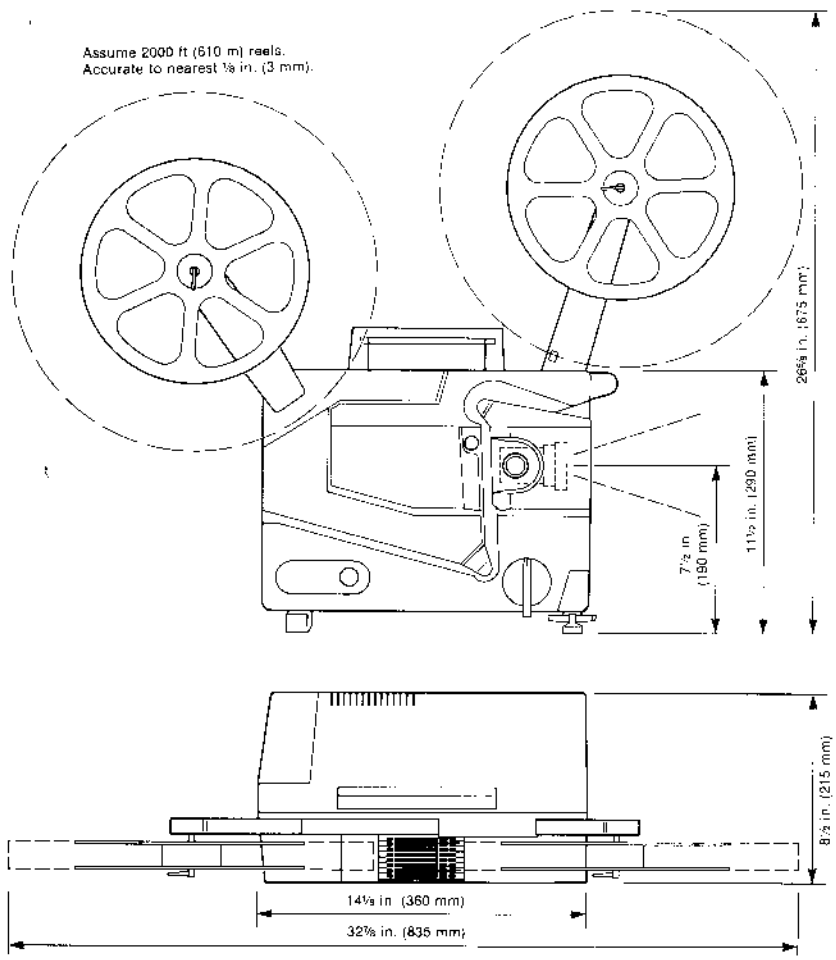
Microphone Jack: 3.5 mm mini, for microphone with impedance of 500 to 10,000 ohms.

Speaker: Built-in 5 in. (127 mm) diameter, 8-ohm.

Speaker Jack: ¼ in. (6.35 mm) phone jack, for 8-ohm load.

Exciter lamp: ANSI Code BRK, 4 V, 0.75 A, rated for 50 hours average life.

Sound Pickup: Silicon photovoltaic cell.



NEW AUDIOVISUAL EQUIPMENT WARRANTY

***KODAK EKTAGRAPHIC* CT1000 16 mm Projector**

Kodak warrants this *KODAK EKTAGRAPHIC* CT1000 16 mm Projector to function properly for three years from the date of purchase. This warranty does not cover the projection lamp or the exciter lamp. Kodak makes no other warranties, express, implied, or of merchantability, for this equipment. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Carefully read and follow the instructions in this manual to get the best results and to prevent damage to your sound projector.

If this projector does not function properly within three years after purchase, Kodak will repair or replace the projector at its option and at no charge unless damaged by misuse or other circumstances beyond Kodak's control.

REPAIR OR REPLACEMENT IS KODAK'S ONLY OBLIGATION. KODAK WILL NOT BE RESPONSIBLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES RESULTING FROM THE SALE OR USE OF THIS 16 mm PROJECTOR, EVEN IF LOSS OR DAMAGE IS CAUSED BY THE NEGLIGENCE OR OTHER FAULT OF KODAK.

For assistance in using this projector, contact a dealer in Kodak audiovisual products. Such dealers are listed in the Yellow Pages of your local telephone directory under Audiovisual Equipment and Supplies. For service on this sound projector, return it through a dealer in Kodak audiovisual products, or one of the Kodak Equipment Service Centers below. To help us get your sound projector back to you promptly, please enclose a note giving details of the problem, date of purchase, and your complete name and address.

Eastman Kodak Company Service Centers

Atlanta/Chamblee, GA 30341:
5315 Peachtree Industrial Blvd.

Chicago/Oak Brook, IL 60521:
1901 West 22nd St.

Country Club, Carolina, PR 00630:
Kodak Caribbean, Ltd.
Campo Rico Ave. & 246 St.

Dallas, TX 75234:
2800 Forest La.

Honolulu, HI 96819:
1122 Mapunapuna St.
(P.O. Box 17007, ZIP 96817)

Los Angeles/Whittier, CA 90606:
12100 Rivera Rd.

Montreal, PQ H3E 1A1:
Kodak Canada, Inc.
2 Place du Commerce
Ile des Soeurs

New York, NY/Dayton, NJ 08810:
Rt. 130, P.O. Box 1334

North Vancouver, BC V7J 1J3:
Kodak Canada, Inc.
1125 East Keith Rd.

Rochester, NY 14650:
800 Lee Road

San Francisco/San Ramon, CA 94583:
9100 Alcosta Blvd.

Toronto, ON M6M 1V3:
Kodak Canada, Inc.
3500 Eglinton Ave. West

MOTION PICTURE AND AUDIOVISUAL MARKETS DIVISION
Rochester, New York 14650

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