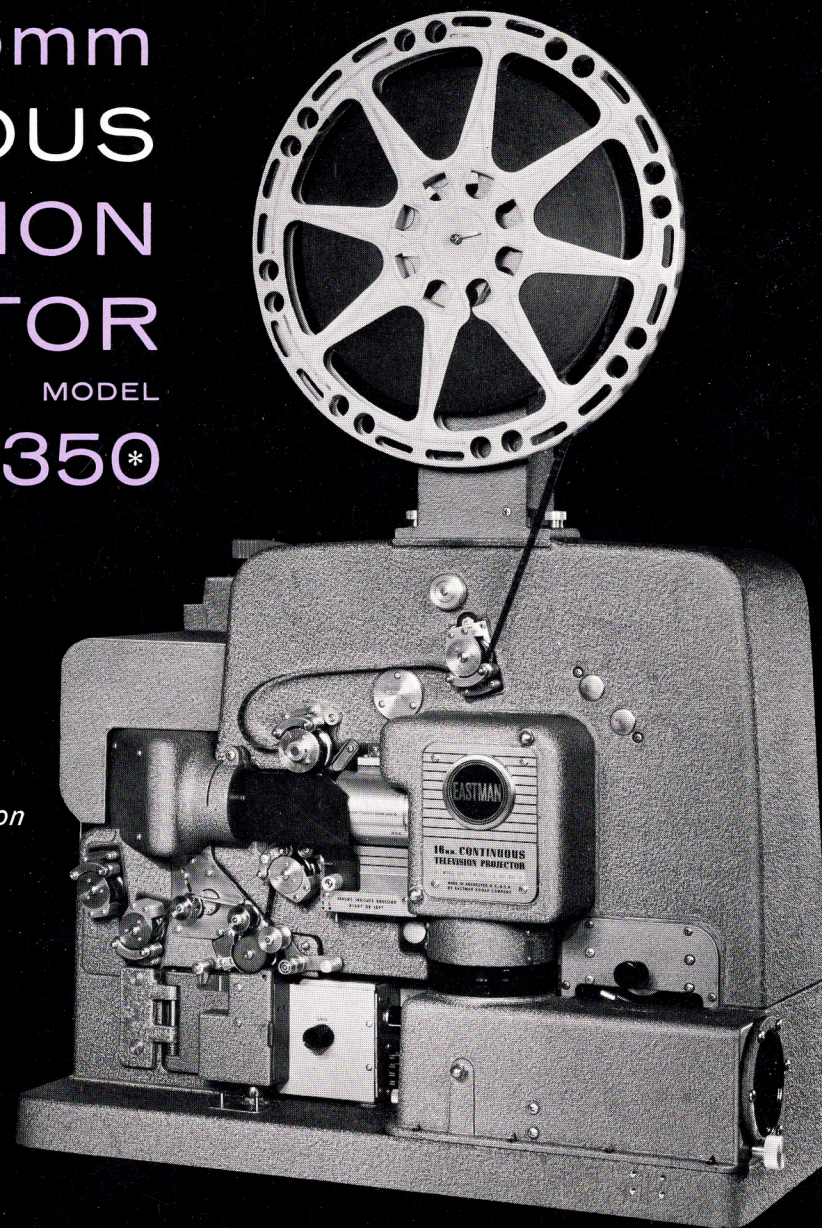


EASTMAN
16mm
CONTINUOUS
TELEVISION
PROJECTOR
MODEL
350*

* *designed for uniplex or multiplex operation*



THE EASTMAN 350 PROJECTOR SOLVES SOME OF TV'S MOST PRESSING PROBLEMS

Picture unsteadiness due to faulty intermittent film advance has been corrected by elimination of the intermittent film advance mechanism.

Motor and other equipment failure have been eliminated by adoption of a heavy-duty mechanical system which includes separate motors for the main and each auxiliary drive.

Poor picture quality, resulting from abraded film, has been corrected by a unique skew-ray plate in the optical system.

Short film life, due to rapid acceleration and deceleration in intermittent projectors, has been eliminated by changing to continuous film advance.



These photographs of the same motion picture frame were taken from a studio monitor. They show how the Eastman 350 can suppress serious film defects, such as scratches.



Ever since the days of Theda Bara, the idea of continuous film advance has been pursued like a will-o'-the-wisp by succeeding generations of motion-picture projection engineers. When television came along, this idea became even more enticing.

Until now, the television industry has had to use projectors modified from designs created for theater projection.

The designers of the Eastman 350 Projector felt that television had introduced completely new ground rules for projector design. By designing to these new rules, they have created a *true* television projector.

As you will see from the following pages, some fresh design concepts have been introduced. The result is a standard of performance and picture quality for which there is no comparison.

With the introduction of the Model 350, modified to function in the standard 48" multiplex bench, Eastman is fulfilling its obligation to bring to the television industry the best possible image projected from motion-picture film.

One major advantage this new projector brings to stations is that film once considered unusable because of scratches and other abrasions may now be programmed. Inventories of film costing thousands of dollars can now be salvaged.

To the television audience, the Model 350 assures uniform picture quality in both color and black and white film presentations. This is what helps gain high ratings for filmed programs.

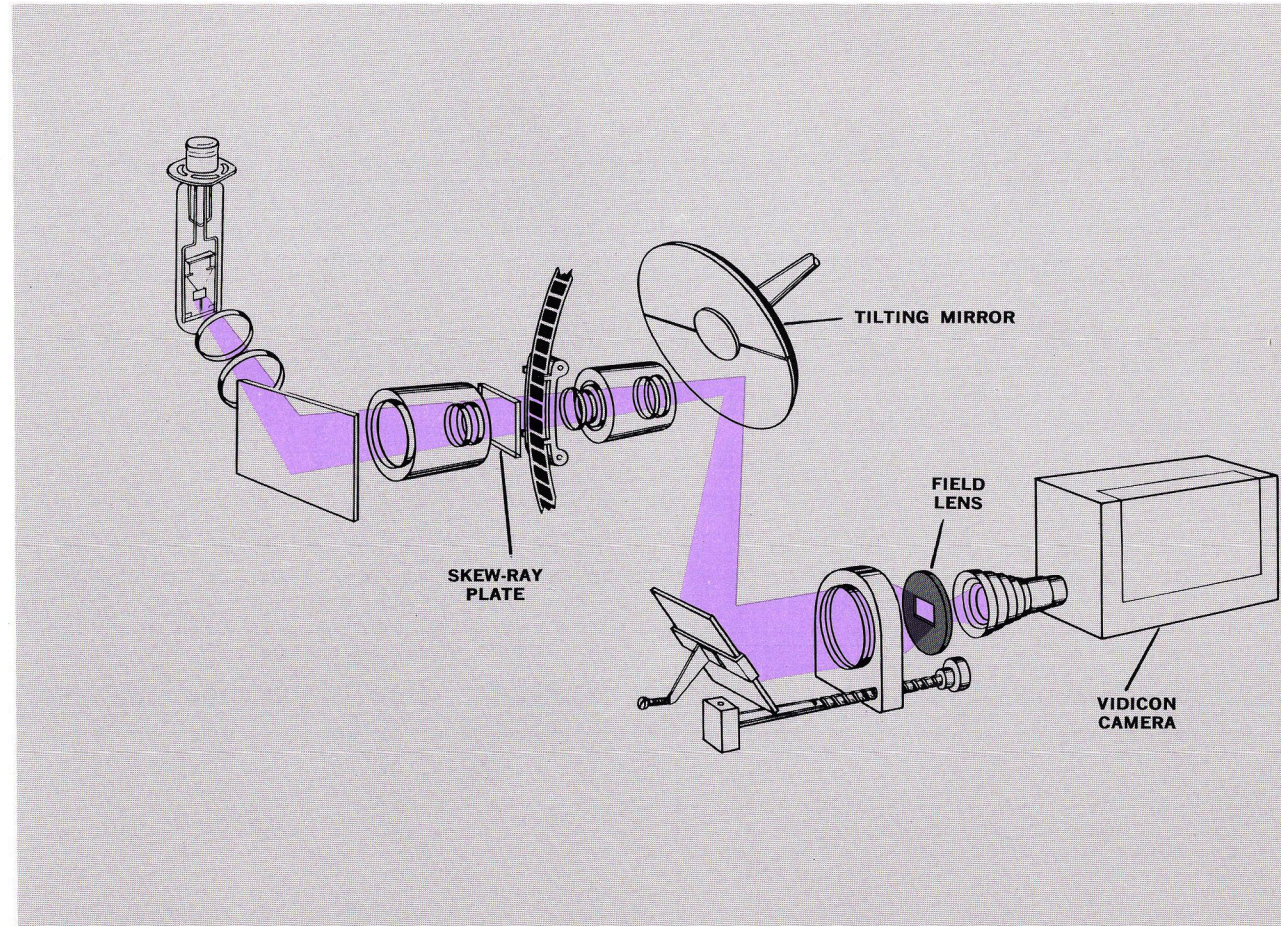
Eastman's new optical system permits 100% light application

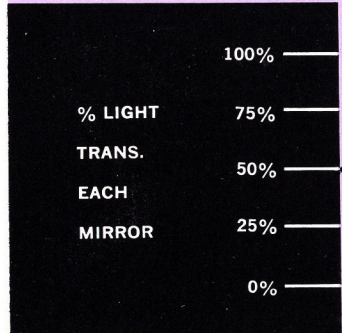
There are many basic differences between this and the optical systems found in other projectors. Missing are the conventional shutter and clamping gate. Instead of light pulses, we have 100% light application. None of the trouble-breeding elements of an intermittent film advance mechanism are required.

A hardened-steel, shoe-like gate functions as a bearing for the film as well as an aperture for light.

The Model 350 will function with the standard multiplex benches available today. No special adapting equipment is needed to fit it into an existing film chain.

The diagram shows how the film, traveling at a linear speed of 36 feet per minute, is immobilized by the action of two tilting, rotating mirrors which fade one frame into another to create a perfect illusion of uninterrupted motion.

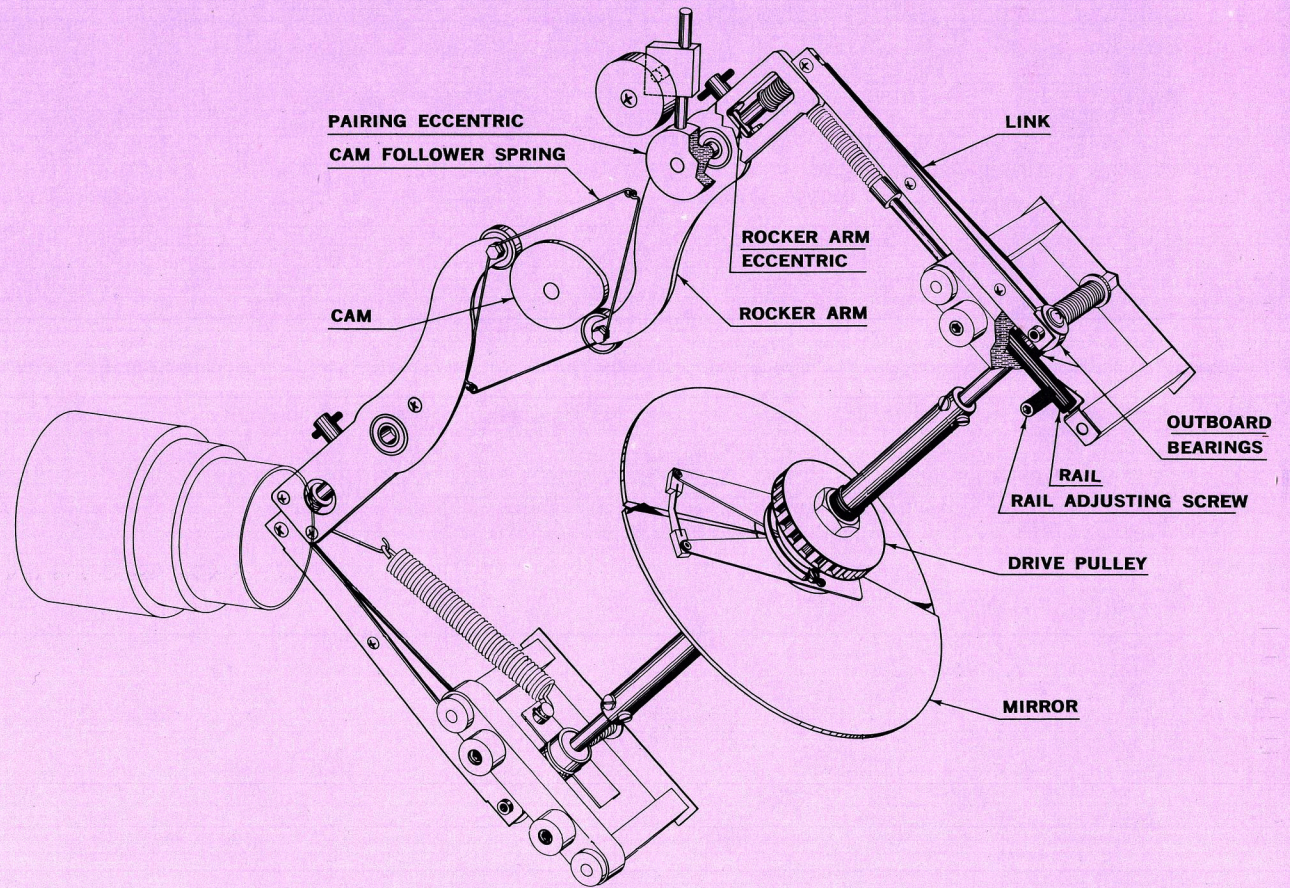




Eastman "stops" film with mirrors

This is the heart of the new Model 350 television projector. By using a pair of rotating, tilting mirrors and their associated linkages, Eastman engineers have eliminated the entire intermittent film advance system found in other projectors.

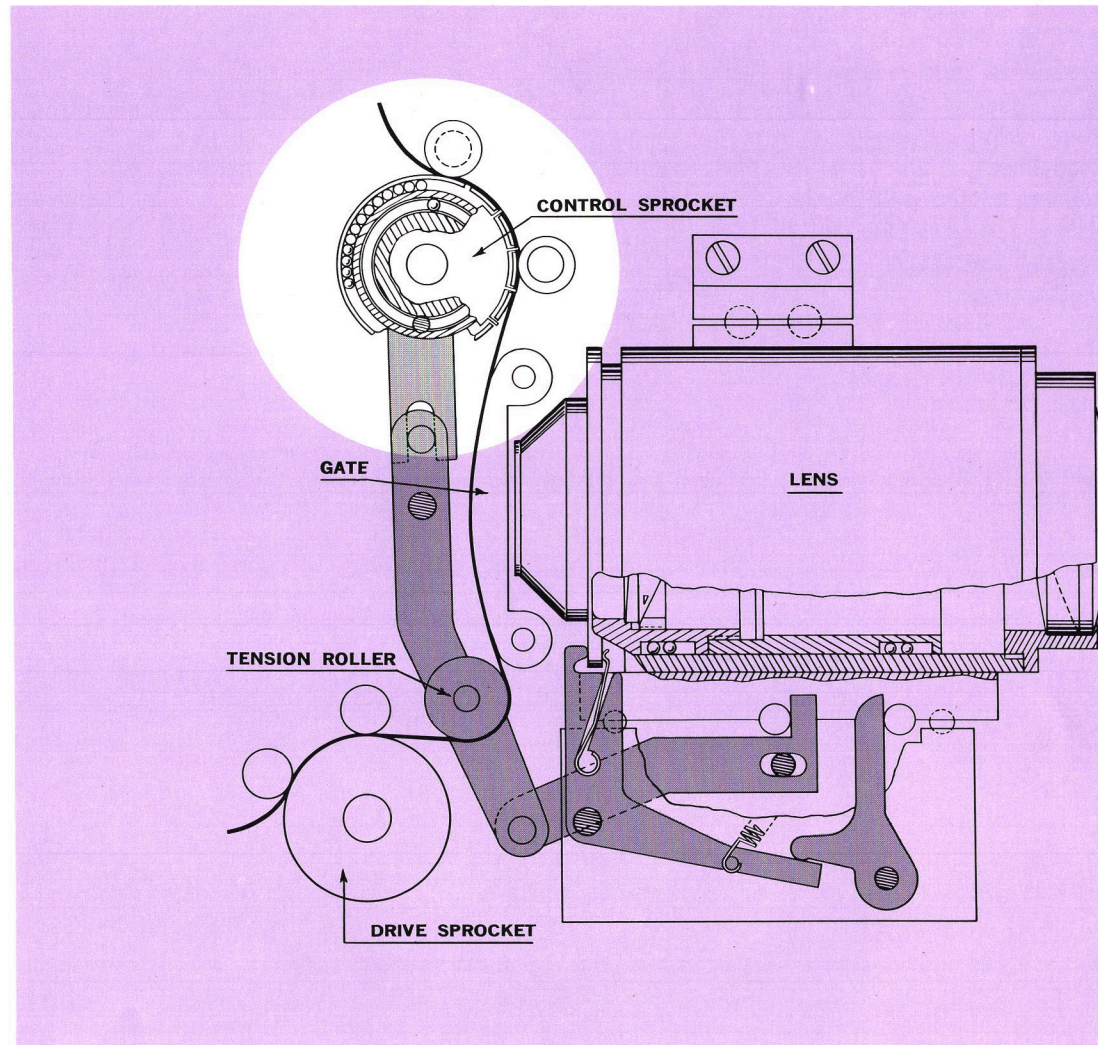
Because the film advances continuously, there are no shock forces set up by stopping, clamping and rapid acceleration. The projector will last longer, run quieter and handle film without damage. All of these factors help bring down the cost of film programming and improve image quality.



Variable-pitch sprocket compensates for film instability

Because film shrinks and stretches with fluctuations in temperature and humidity, picture quality can be affected — even though these dimensional changes are of small magnitude. The Eastman approach to this problem was to design a variable focal-length lens and variable-pitch control sprocket.

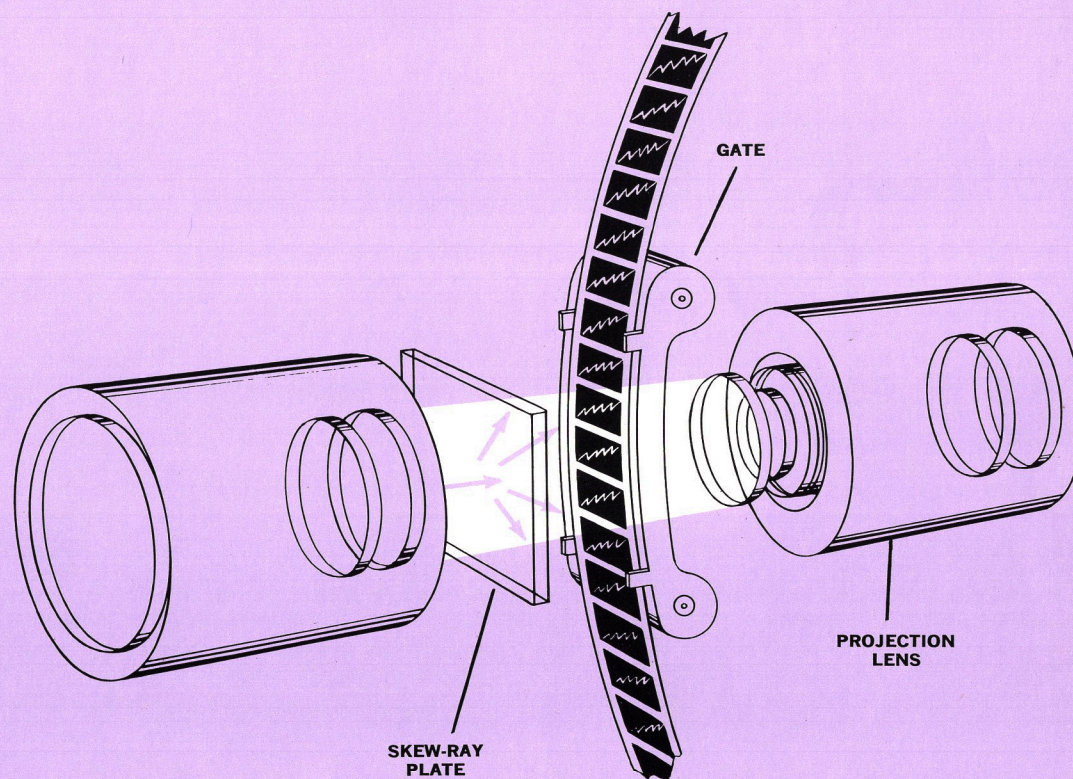
With its associated linkage, this variable-pitch control sprocket continuously measures perforation spacing and continuously compensates for the slightest variations. It does this by adjusting focal length of the projection lens. Because it matches the pitch of the sprocket to the pitch of the perforations, film positioning at the gate approaches absolute uniformity.

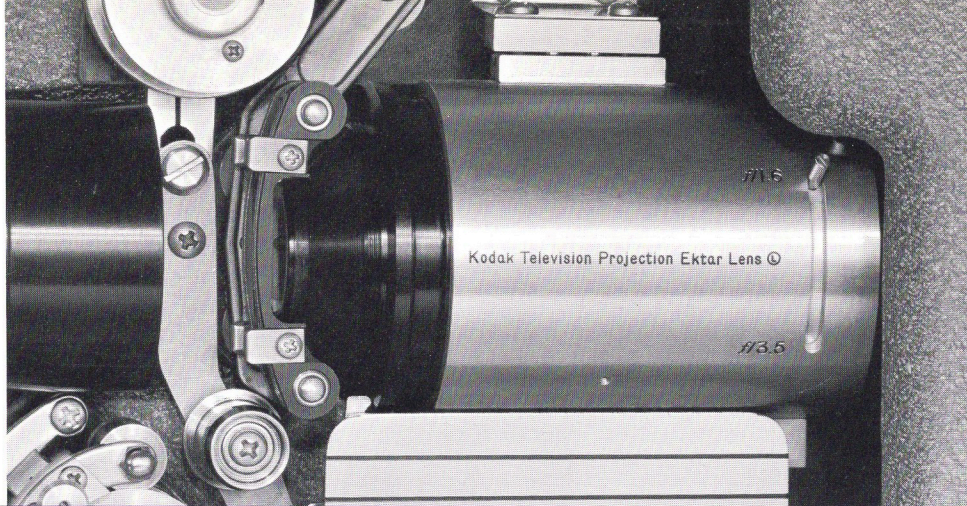


New film defect suppression system

The geometry of the optical system in this projector permits introduction of a special diffusion plate immediately adjacent to the plane of the film. This "skew-ray" plate breaks up the collimated light beam into random rays so that film defects are illuminated from so many different angles that they virtually disappear.

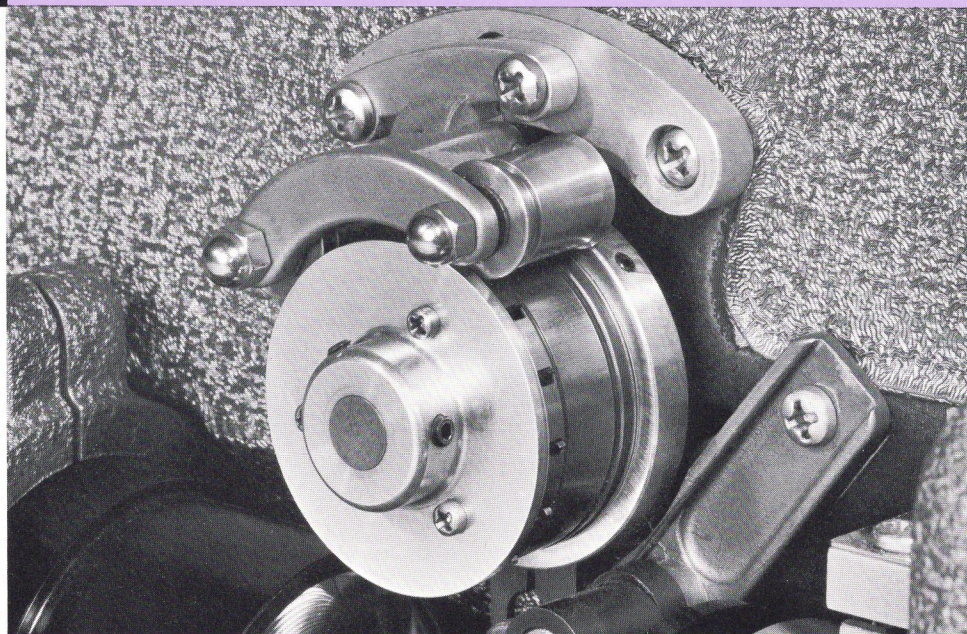
This simple solution to the problem of film defects became practicable because of 100% light application and elimination of the massive clamping gate.





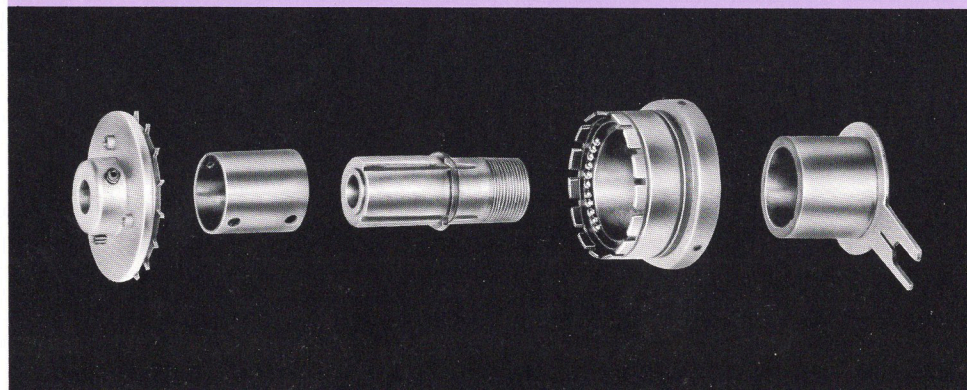
Close-up of projection lens

Continuous measurement of the film during projection permits automatic precision adjustments of the projection lens to compensate for film stretch and shrinkage. Result: a steadier, more uniform, higher quality picture on viewers' sets.

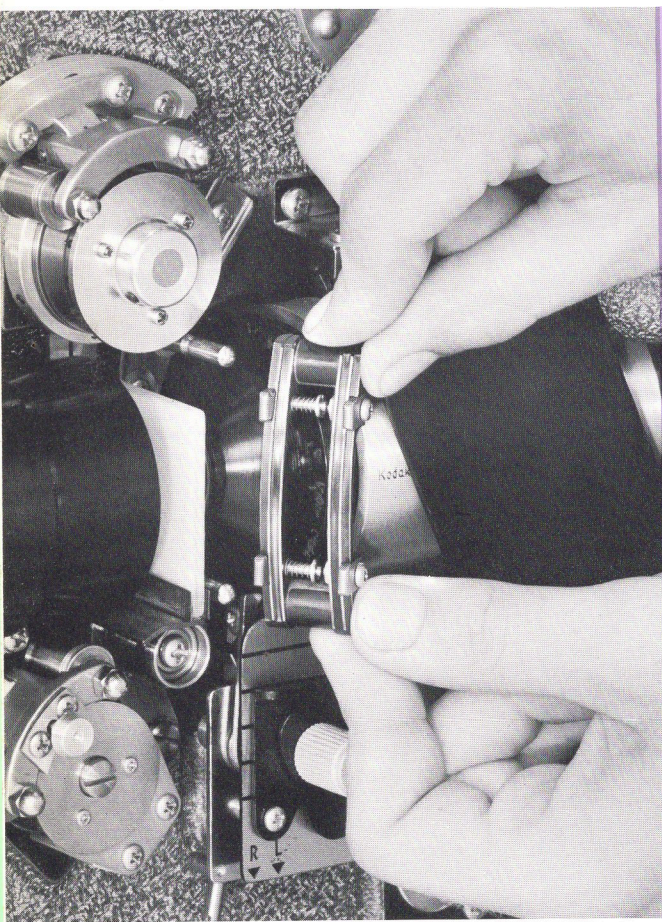


Close-up of sprocket

The extreme accuracy of this variable-pitch control sprocket is the key to maintenance of a uniform picture.



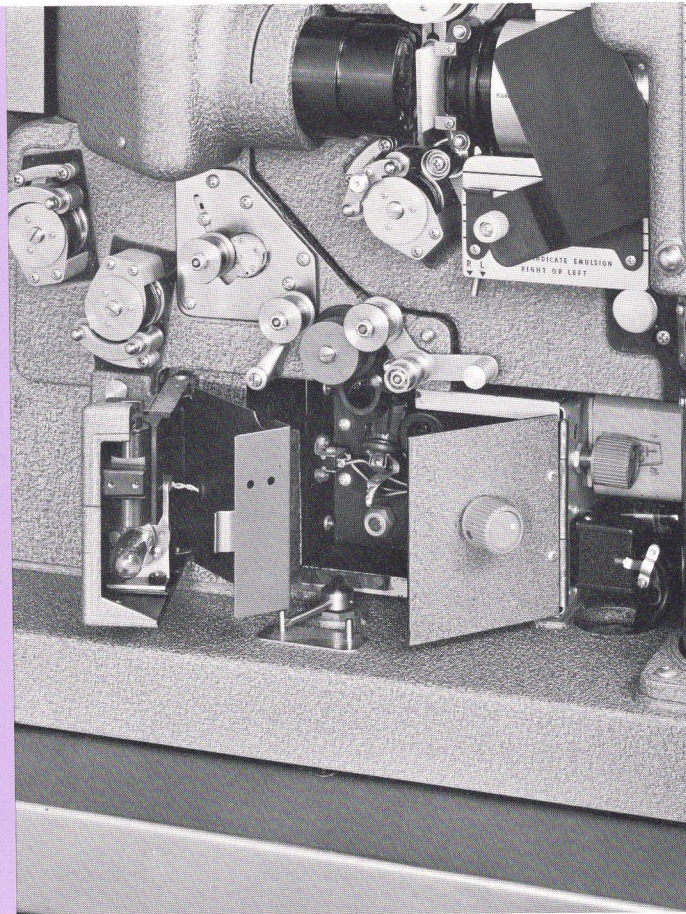
Details...



Close-up of gate

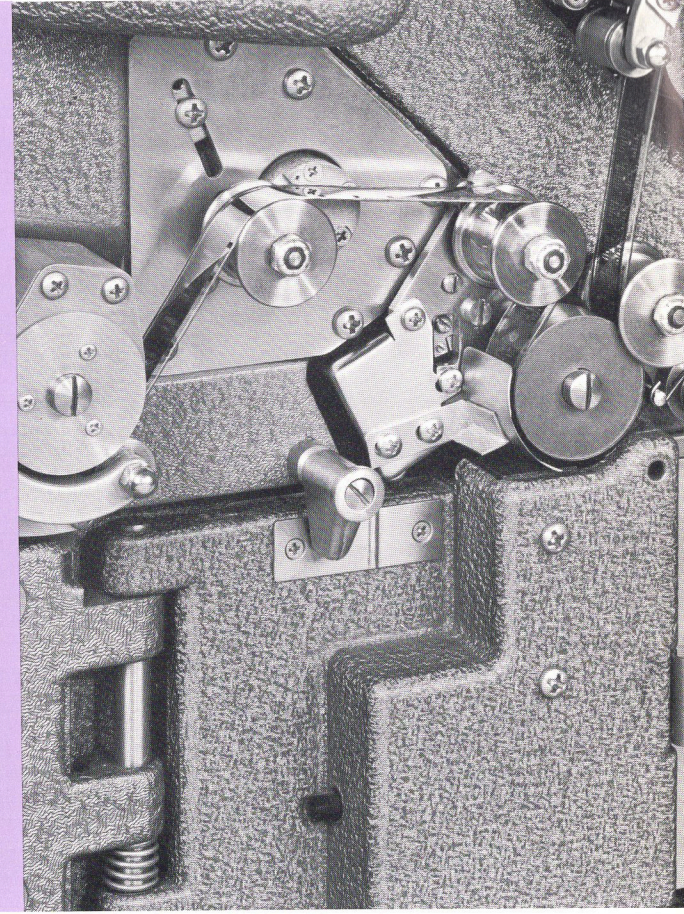
This is the hardened-steel gate or shoe which replaces the conventional clamping gate found in other projectors. Its jewel-like bearing surface offers virtually no impedance to even poorly lubricated film.

NOTE: This feature does not mean that film needs no lubrication in this projector. The tracking quality of the film, especially through the sound system, is still dependent on proper film lubrication.



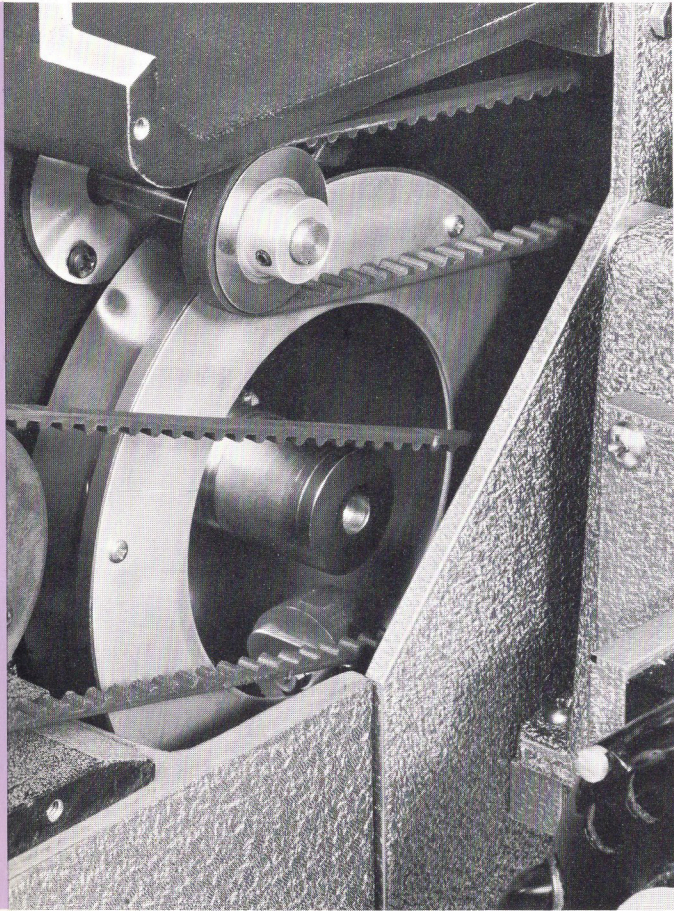
Close-up of sound system

Since the sound system is a vital part of any projector, Eastman engineers have provided this new projector with the ultimate in both optical and magnetic reproduction. Components of the 350's sound system are placed for maximum convenience and accessibility.



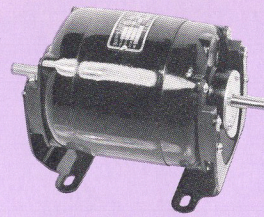
Magnetic head

A meticulously engineered magnetic playback kit is available for field installation on the 350.

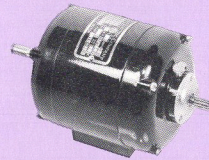


Sound damping at flywheel

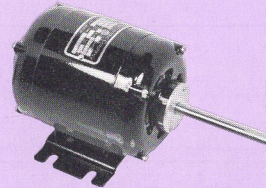
Damping of the sound system is maintained through eddy-current drag on the flywheel and by a silicone-fluid damping unit.



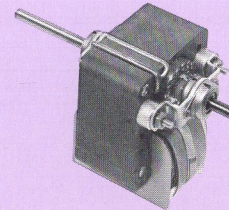
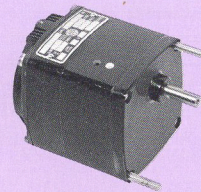
1 MAIN DRIVE MOTOR



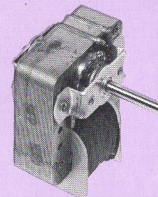
2 SOUND DRIVE MOTOR



3 LAMPHOUSE BLOWER MOTOR

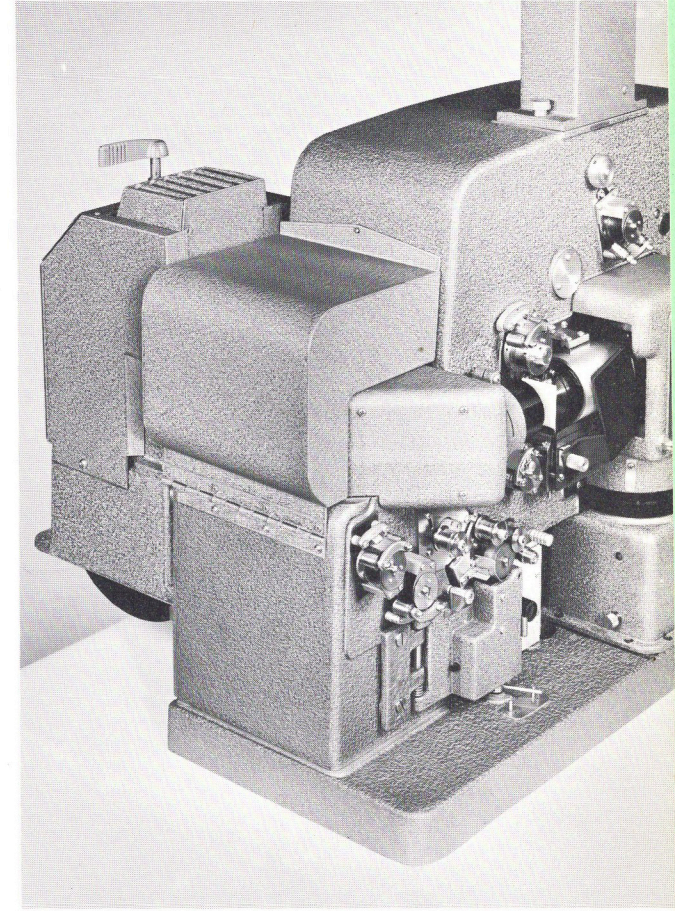


4 TAKE-UP MOTOR 5 REVERSE DRIVE MOTOR



6 MECHANISM FAN MOTOR

Each drive system in this projector has its own special motor. This has the double advantage of providing longer trouble-free service and of isolating any possible shock forces.



Illumination

Light is supplied from a lamphouse which will accommodate lamps up to 1,000 watts. A turntable holds a second lamp for quick replacement. An automatic lamp change mechanism is available as an accessory. Unique optical system assures even illumination across field.

Film Transport

Continuous at a rate of 36 feet per minute or 24 frames per second.

Film Shrinkage

Automatically compensated for by changes in focal length of projection objective activated by variable-pitch control sprocket.

Separate Motors

Main projector mechanism, including mirrors and continuous sprockets driven by main synchronous motor. Separate synchronous motor drives sound sprocket. Lamphouse blower and take-up reel arm each has its own motor. Additional motor for reverse drive for cueing.

Shutter

100% application of light to television system.

Film Gate and Gate Tension

Hardened, curved assembly provided at gate for precise placement of film during projection.

Since film is not stopped during projection, absence of a clamping gate eliminates need to control gate tension.

Steadiness

Exceeds ASA standards. Dependence on properly lubricated film is diminished because film is not rigidly clamped during projection. The variable-pitch control sprocket assures optimum registration at film gate.

Defect Suppression

Unique optical system, including the skew-ray plate, suppresses to a large degree most film scratches and gross film defects.

Still Frame

Provision has been made for projection of single frames for indefinite periods with no loss in quality.

Reverse Drive

A slow speed reverse drive has been provided for remote cueing.

Sound Optics

Have an effective slit of 0.0003", the narrowest width yet obtained with 16mm film. Optics can be focused for either position of the film emulsion during projection.

Sound Stability

Sound system consists of a film-driven solid drum and balanced flywheel. Damping of system is maintained through use of eddy-current drag on the flywheel and a silicone fluid friction damping unit.

Flutter

Flutter content of sound system is less than 0.2% RMS.

Magnetic Playback

Available as a factory-assembled kit.

Power

Normally requires power input less than 1,000 watts.

EASTMAN KODAK COMPANY, Rochester 4, N. Y. • Motion Picture Sales Division, Rochester, New York