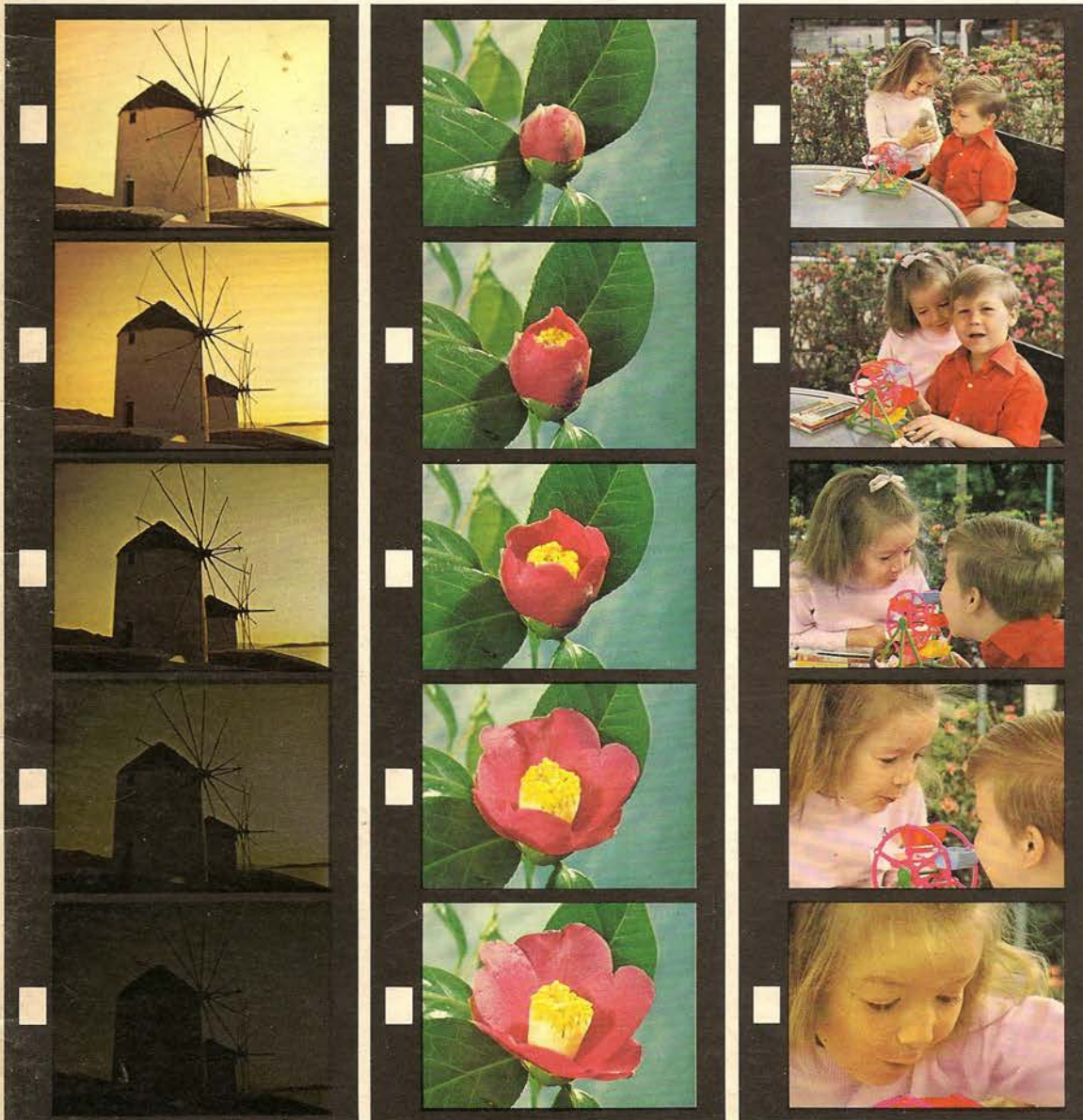


The Minolta Autopak-8 D Series Movie Cameras



Contents

Introduction	3
The Autopak-8 D10.....	4
The Autopak-8 D6 & D4	7
The Electromagnetic Shutter Release	8
System Accessories	11
The Zoom Rokkor Lens	15
The D10 Zoom Lens	16
The D6 & D4 Zoom Lens	17
The TTA Exposure System	18
Total Information Viewfinder	19
The D10 Viewfinder.....	20
The D6 & D4 Viewfinder	21
Other Autopak-8 D Features	22
The D10: Features & Functions	24
Filming Speeds.....	24
Variable Shutter Opening System	25
Ultra High-Speed Filming	25
Automatic & Manual Fading	26
Exposure Adjustment	27
Other Autopak-8 D System Accessories	28





Introduction

8mm moviemaking for the 1970s is undergoing an important creative revolution. Within the last few years, thanks to advances in electronics, miniaturization and the matching of precise optics to mechanics, new cameras have appeared on the scene that have altered the entire concept of the small 8mm film format. These cameras, with their big zoom lenses, variety of filming speeds, and instant-cartridge-loading features, have been designed to make the same kind of interesting, professional-looking films that could only have been made before with special—and much more costly—equipment, usually 16mm. Moreover, they have been eminently successful. More and more, as the 8mm format gained popularity among persons involved in the making of important industrial, educational and scientific films, the films that were made began to reflect the outstanding versatility of the small, truly mobile 8mm camera.

The introduction of the Minolta Autopak-8 D series of Super-8 movie cameras carries the 8mm creative revolution a significant step forward. For the first time, there is a total system for Super-8 photography, and, also for the first time, the cameras and the entire system are available in a price range that is appealing to all kinds of cinematographers.

The Autopak-8 D10 is an incredibly versatile camera, with more features and special accessories than any other 8mm camera—and it is priced accordingly. The Autopak-8 D6, more compact but with much of the D10's versatility, is medium-priced. And the Autopak-8 D4 is budget-priced, even though it uses the same system of Minolta Super-8 accessories as the other two cameras.

What makes the three cameras truly unique is the common use of a simple development called an electromagnetic shutter release, which is interchangeable between all the cameras and the group of Minolta system accessories. Because this shutter release has an unparalleled control function, it can be used as a release cord and a remote-control cord, it can actuate two different automatic time-lapse Intervalometers and a cassette tape recorder for 8mm sound recording. It can do many of these functions simultaneously, and from distances as far away from the actual camera as 260 feet.

The capabilities of this shutter release system, and the Minolta accessories which have been designed around it, are without precedent in the entire field of 8mm film technology. Now, no longer is this small film format limited to basic, amateur uses. It is, as you shall learn from the pages that follow, a greatly advanced means for creative expression.

3

4

The Autopak-8 D10: An Entirely New Concept in Super-8 Movie Cameras

This fine Minolta product is perhaps the most advanced 8mm camera ever manufactured. Without question, it stands unique in the entire 8mm field as an uncompromising professional instrument capable of mastering any of the complex and specialized range of cine challenges. Even if you are a very serious professional moviemaker used to working with much larger film image sizes, you will be challenged by the variety of ways the D10 solves creative problems. If you are a serious amateur, or the novice just taking a critical interest in the superlative medium of film, you will want the D10 for the many ways it rivals the versatility and sophistication of far more complicated, far more expensive large film format cameras. It is an uncompromising cine camera.

The D10 is a system for Super-8 photography—and it is much more. It offers more capability, more technical ingenuity than any other 8mm camera, but it also elevates the entire Super-8 format to a creative level never before thought possible.

A brief list of the D10's features give only a partial picture of its capabilities. There is a 7mm to 70mm Zoom Rokkor Lens and a

variable five-stage speed power zoom control. Its consistently accurate exposure measuring system is Minolta's exclusive through-the-aperture electric eye. With the D10's variable shutter sector unit, you will be able to make fully automatic or manual fade-ins or fade-outs at shutter speeds of your choosing. And you will have a choice of seven different and precise filming speeds—from single frame to 50 frames per second. There is a control-center viewfinder so that all of your viewing and focusing adjustments will be made as you look through the viewfinder. And an exposure adjustment system that permits compensations for special effects or unusual lighting conditions.

The D10's system of creative cinematography, like all the Minolta Autopak-8 D series movie cameras, is built around the exclusive interchangeable electromagnetic shutter release. So with accessories like a release cord, remote-control cord, wireless control unit, two different Intervalometers, and a tape recorder-control cord, you will be able to accomplish most any kind of special effect, special filming application—and create extraordinarily professional films.

(A comprehensive discussion of the D10's features and functions begins on page 24 of this brochure. The electromagnetic shutter release and system accessories are described on pages 8–13).





The Autopak-8 D6 and D4: Compact, Full Systems of Super-8 Movie-making

It is one thing to build a comprehensive system of Super-8 filmmaking and quite another to build a compact camera that can use it to full capability. With the Autopak-8 D6 and D4, Minolta has done just this. Since both of these fine cameras incorporate the Minolta electromagnetic shutter release, and have many of the same features of the D10, their versatility for specialized filming and special effects is comparable to the more expensive Super-8 camera. Almost all D series accessories fit both the D6 and D4. They may be operated by remote control or wireless control. They accept both Minolta Intervalometers for precise, automatic time-lapse or ultra-slow filming. You can couple a cassette tape recorder to either camera to record sound. In short, both the aim and the scope of these Minolta products are to expand the creative potential of the filmmaker, and permit him a variety of sophisticated ways to solve cinematographic

challenges—all within a reasonable budget.

Both cameras are easy-to-handle, easy-to-operate, requiring no special experience in the techniques of moviemaking. Both are immensely versatile and packed with new developments in photoelectronics, miniaturization and photographic optics. The D6 has an 8.4mm to 50mm Zoom Rokkor Lens with variable-speed zoom control. A total control-center viewfinder that provides complete, continuous filming information as you make your Super-8 film, automatic through-the-aperture electric eye exposure measuring, choice of three filming speeds, and a folding hand grip for operating and storage convenience. The D4 has all of the above features, and comes with a 9.5mm to 38mm Zoom Rokkor Lens.

With the addition of the electromagnetic shutter release and the Minolta D series accessories, the cameras stand alone in their price range as cinematographic tools of distinctive capability, perfect for beginners and advanced amateurs alike.

7

8

Minolta's Electromagnetic Shutter Release: Key to an Incomparable System of Super-8 Accessories

It is small, about the size of a matchbox, and its function is very similar to an electric switch since it performs a basic on-off switching operation. Yet without the simple-looking and uncomplicated electromagnetic release which fits, and is interchangeable with all three Autopak-8 D cameras, design of the Minolta D system accessories would not have been possible.

The magnetic release system differs basically from a conventional mechanical shutter system inasmuch as it activates the shutter electromagnetically—and may be removed and interchanged with other releases manufactured by Minolta for use with a wide range of accessories. It performs the on-off switching operation for regular filming, of course, but it also performs a more significant and wide-ranging *control* function for the system accessories. And herein lies its incomparable versatility.

Example: Removed from one of the D series cameras and connected with a short extension cord, the switch becomes a convenient remote-control unit. Or an "on-off switching" cable release hand-operated from distances up to 50 feet (15 meters) from the

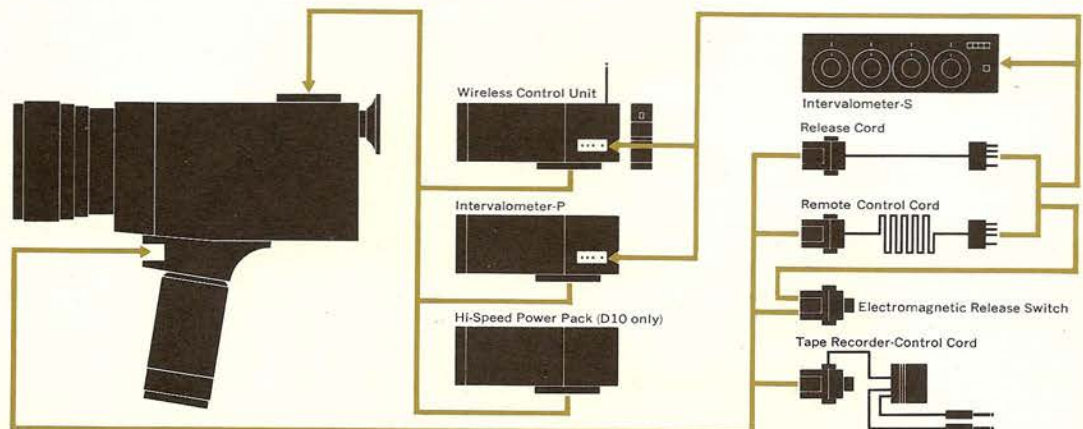
camera.

Connected to a special Minolta Intervalometer (two are available), the switch permits automatic time-lapse photography for a variety of industrial, scientific, or basic photographic uses.

Coupled with most cassette tape recorders now on the market, the switch allows the photographer to add sound to his film. Much more, too.

So versatile is the mechanism and yet so stable and positive is its electrical operation, that one electromagnetic release can control two, three, even more than a dozen Minolta D series cameras for simultaneous filming, if such a complex operation would ever be required. Radio-control operation of the camera from a very great distance, even in areas of high-rise buildings, is also made possible by the shutter release mechanism, as is the control of a *group* of accessories simultaneously, such as timer, radio-control tape recorder, strobe, etc.

The accessories that may be used with all three Autopak-8 D series cameras are described in detail on the pages which follow. They give ample evidence of the virtually unlimited potential and promising new dimensions of 8mm photography, as perfected by Minolta.



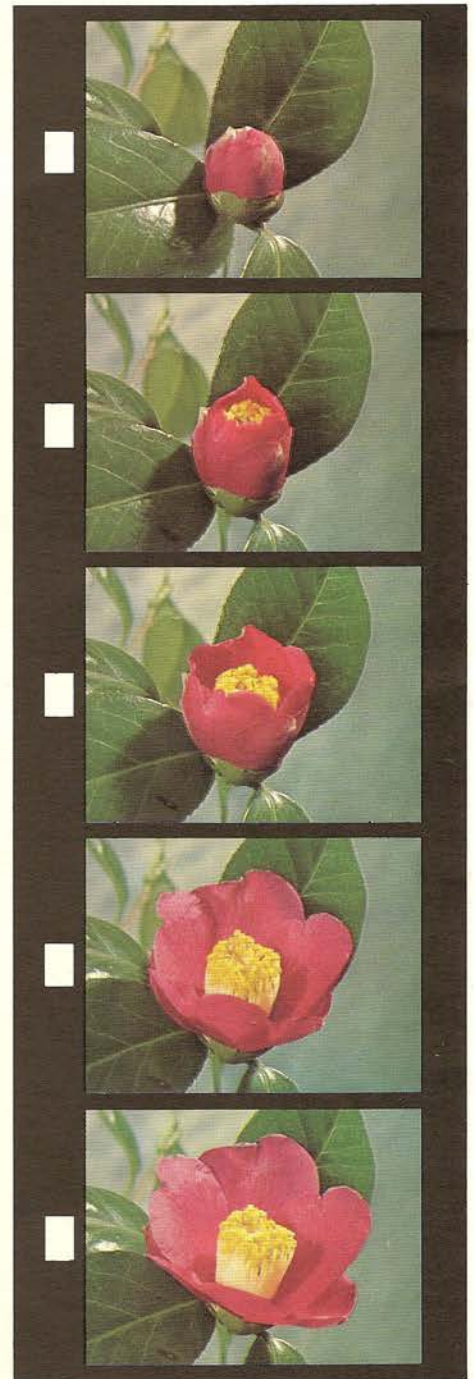


minolta

RELEASE
SWITCH

JAPAN

10



The Autopak-8 D System Accessories

Intervalometer-P

This cylindrical shaped device is an automatic repeating timer for making single-frame exposures at any of eight different intervals. Small in size, lightweight, it is easily mounted on the camera's accessory shoe and thus is especially useful in location filming.

The Intervalometer-P may be set to fire a single frame at 0.5 to 60 seconds.

Among its many other potential uses include measurement of the movement of clouds, the movement of the sun at sunrise and sunset, transition of hues in the sky at sunset, and filming or animations by moving cut-out pictures and titles. It is extraordinarily valuable for traffic and motion studies, and is a fascinating tool for filming nature, such as the blooming of house plants and garden flowers.

Intervalometer-S

Even more versatile than the Intervalometer-P is this high-quality professional accessory, capable of actuating exposure at intervals from 0.2 seconds to 10 minutes.

This unit may be used for sampling (a series of continuous-run sequences filmed for a certain duration—5, 10, 20 seconds—at regular intervals—15 seconds to 10 minutes) and indent sampling (a series of time-lapse sequences filmed— $\frac{1}{8}$ to 10 seconds—for a certain duration—5, 10, 20 seconds—at regular intervals—15 seconds to 10 minutes). It is also valuable for time-lapse work and motion analyses, nature studies of plants and animals, traffic and meteorological studies, much more.

The Intervalometer-S is complete with relays, magnetic counter, battery checker, and work sampling start signal lamp mark.

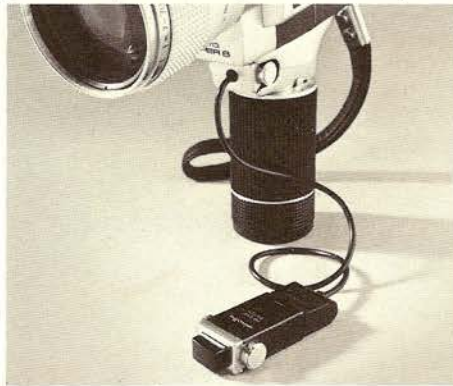
Filming Interval & Projection Times

Filming interval	Filming time required to	
	produce 10 seconds projection time at 18fps	expose a full 50-foot film cartridge
0.2 sec.	36 seconds	12 minutes
0.5 sec.	1 minute 30 sec.	30 minutes
1 sec.	3 minutes	1 hour
4 sec.	12 minutes	4 hours
15 sec.	45 minutes	15 hours
60 sec.	3 hours	60 hours
4 min.	12 hours	240 hours
10 min.	30 hours	600 hours

12

Release Cord

A 12-inch (30cm) cord with a variety of functions, this accessory serves many of the same purposes as a mechanical cable release. Yet, with its "on-off" switching mechanism, it is much more versatile than any conventional cable release ever invented. The release cord is especially valuable for single frame exposure, for animation and titling. It prevents camera movement, and allows you great freedom of movement while you manipulate titling cards or subjects.



Remote Control Cord

This 16½-foot (5-meter) cord is simply a release cord of extended length. It is installed the same way as the shorter release cord,

and is also hand-operated. For remote control filming from great distances, it is possible to connect up to *three* cords and hand-operate the camera from a distance of 50 feet (15 meters). The remote control cord may also be used to operate more than one camera at a time, or to allow the photographer to get in his own picture.

Tape Recorder-Control Cord

The electromagnetic shutter release permits synchronized sound recording when any of the cameras and most popular cassette tape recorders are connected. The tape recorder-control actuates both the camera shutter and the recorder.

Wireless Control Unit

Wireless control of the D series cameras is possible from distances from 100 to 260 feet (30 to 80 meters) outdoors when the camera is connected to this unit, which consists of a transmitter and receiver. The wireless unit assures the same positive electromagnetic shutter release accuracy as all other accessories. For covert filming of wild birds and other normally inaccessible subjects, the wireless control unit is indispensable. It is also invaluable for filming a subject with two or more cameras simultaneously from different angles, or similar shutter actuation from a distance.



Remote Control Cord



Tape Recorder-Control Cord



Wireless Control Unit

14

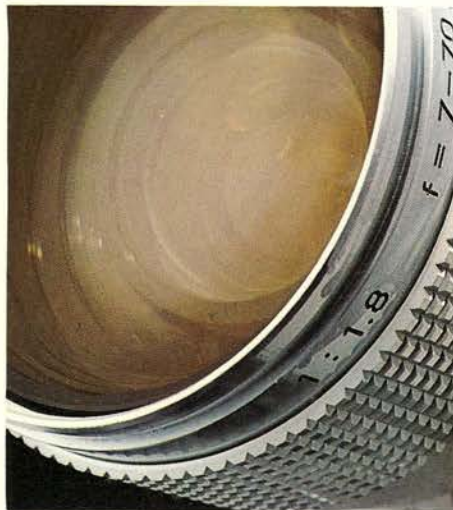


**The Zoom Rokkor Lens:
Ease-of-Handling and Perfectly
Matched Optics**

A superb Zoom Rokkor Lens, computer-designed, is standard equipment with each Autopak-8 D series camera. The D10's zoom is an F1.8 Rokkor with 10-power zoom ratio of 7mm to 70mm. The zoom on the D6 is an F1.8 Rokkor with 6-power zoom ratio of 8.4mm to 50mm. And on the D4, the zoom is an F1.8 Rokkor with 4-power zoom ratio of 9.5mm to 38mm. Since Minolta is one of the two companies in Japan and one of the very few in the world that manufactures its own optical glass and lenses, all Minolta Rokkor Lenses (for still and movie cameras alike) are subjected to a program of quality control that is the camera industry's most thorough. The zoom lens of each camera reflects this dedication to excellence, from ease-of-handling to perfectly matched optics and mechanics. Their inherent versatility gives you a unique ability for achieving highly dramatic and imaginative filming at all times.

Each Zoom Rokkor Lens is a product of more than 40 years of Minolta research and development in photographic optics. The performance of each is guaranteed. Rokkor Lenses of all kinds have been prized for their ability to provide even brightness from cor-

ner to corner; superb color reproduction, high resolving power with sharp contrast between image and background; and for the photography of objects as they truly exist, with consistent brightness and sharpness. They have a long tradition of quality among professionals and amateur photographers alike. Major Hollywood studios have used Rokkor Lenses to film Academy Award-winning movies and hundreds of thousands of photographers are today using Rokkor Lenses with Minolta's very popular still cameras.



15

16

The Autopak-8 D10: 7mm to 70mm

This big power zoom was built with 17 elements in 13 groups, and features variable speed power zooming, one of the major keys to the prime versatility of the camera. What is truly remarkable about the lens, aside from its sharpness and accuracy of focus, is its ultra-wide angle focal length of 7mm—the equivalent of a 35mm still camera equipped with a 43mm lens. (The maximum telephoto focal length of 70mm is equivalent to a 430mm lens on a still camera.) No other 10X zoom 8mm camera made today, including those with interchangeable lenses, is capable of zooming to such a wide-angle. To achieve this focal length with any other camera would require an investment in 16mm equipment.

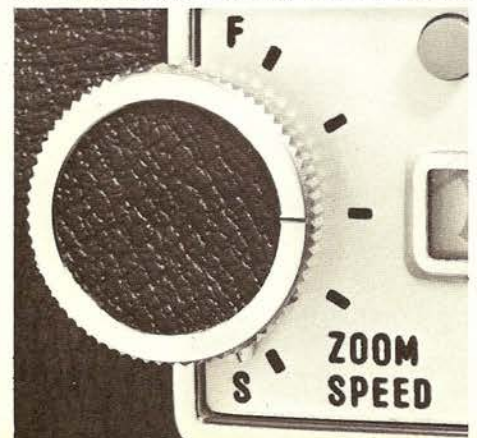
There is a conveniently-situated two-way rocker control located near the top of the camera which allows easy power operation of the zoom. You can operate this control with a simple, gentle touch of your finger.



The lens may also be zoomed by manual operation, or set at any single, specific focal length, by maneuvering a telescoping handle that conveniently attaches to either side of the zoom ring. Use of the world's first electronic governor motor for the zoom speed control means you'll get incredibly smooth accurate zooms.



There is also a five-stage variable speed power zoom mechanism, equipped with IC governed, 4-transistor micromotor for accuracy, located on the side of the camera. This is indispensable for zooming with frame speeds other than the standard 18 frames per second (fps). A simple click-stop adjustment of this variable speed control knob permits you to zoom over the entire 7–70mm range at any speed of your choice from 2 to 12 seconds. You may also change the zoom speed in mid-zoom, say from 5 to 8 seconds, without stopping the power zoom operation.



The Autopak-8 D6: 8.4mm to 50mm

This Zoom Rokkor Lens was built with 14 elements in 12 groups. The zoom ratio is continuously variable with the use of a two-way rocker control positioned near the top of the camera for easy finger-tip control.



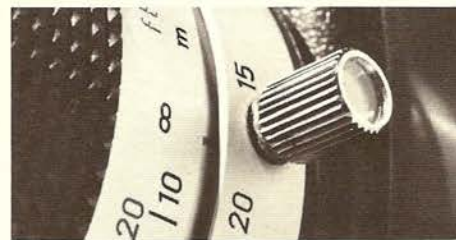
With the D6 you have a choice of two zooming speeds, either fast or slow. If you select the fast setting, you'll be able to zoom from the widest angle to full telephoto in about 1.6 seconds. The slow setting covers the full zoom range in approximately 4 seconds time.



The Autopak-8 D4: 9.5mm to 38mm

There are 12 elements arranged in 10 groups in this smaller Zoom Rokkor, yet it sacrifices nothing to quality of design and manufacture.

A two-way rocker control is positioned near the top of the D4 for finger-tip control while you zoom from wide-angle to telephoto. With the camera filming at the normal 18 frames per second, you'll be able to zoom from wide-angle to telephoto in approximately 5 seconds. The lens may also be zoomed by manual operation, or set at any single, specific focal length, by maneuvering a handle that attaches to either side of the zoom ring.

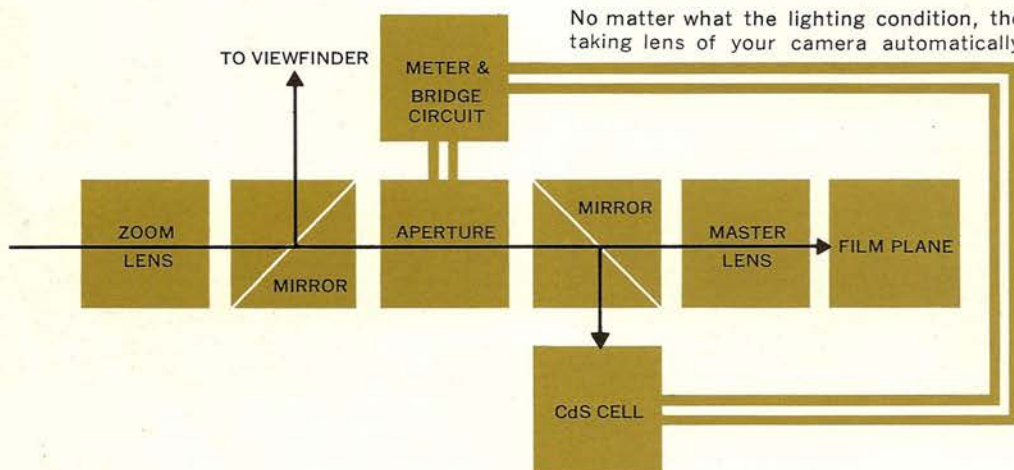


18

Through-The-Aperture Electric Eye Exposure Measuring: Perfect, Automatic Exposure for All Lighting Conditions

Exposure measuring with any of the Autopak-8 D series cameras is fully automatic, consistently accurate, and an entirely new Super-8 concept. Many of the same technological and electronic concepts used in the Minolta Space Meter, carried by America's Apollo astronauts, have been incorporated in the exposure measuring system of the new movie cameras. These advances, however, do not just represent mere modifications of old concepts, but are part of a new exposure measuring technology designed especially for these cameras. The result is an unusually accurate means of measuring light automatically for all moviemaking situations.

No matter what the lighting condition, the taking lens of your camera automatically



and continuously adjusts itself for accurate exposure. The system utilized is called "TTA," or "through-the-aperture," and it differs from the common through-the-lens system inasmuch as it measures light *after* it passes through lens aperture. For comparison, the conventional TTL system measures light after it has passed *only* through-the-lens.

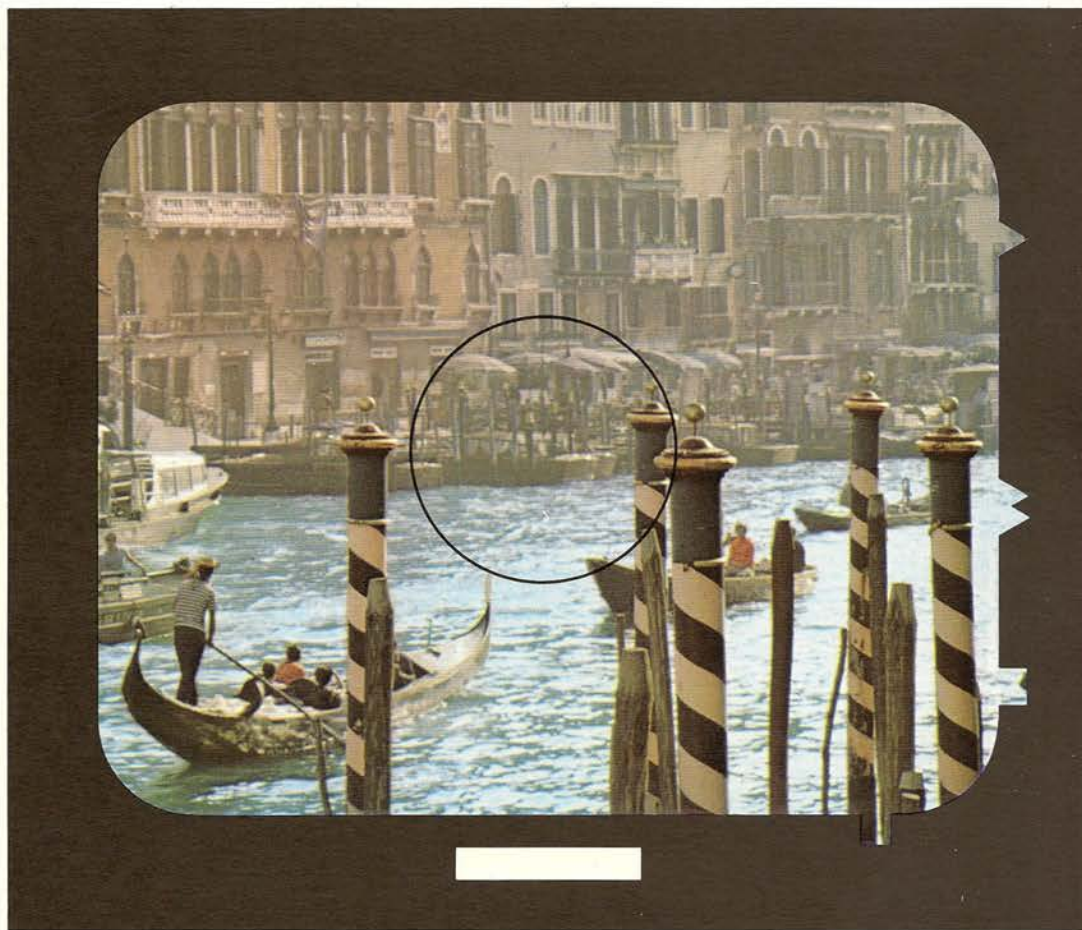
Each Autopak-8 D camera employs both a CdS (cadmium-sulfide) cell and unusual servo mechanism circuit for its through-the-aperture electric eye exposure measuring. And since this system permits the measurement of light after it passes through the half-mirror of the finder assembly and the aperture, it is able to measure light having the same characteristics as the true image-forming light that strikes the film plane. Thus when the brightness of this image-forming light varies even a small amount this variation is "signalled" back to the bridge circuit in the electric eye system to control the lens opening automatically. All light reaching the film plane is controlled to maintain the same brightness, and to insure exact exposure at all times. Opening and closing of the lens aperture is also controlled by this unique system, and all compensations for frame speed, focal length, zooming and filter variations are made automatically.

Because this Minolta electric eye system utilizes a servo unit connected with the bridge circuit, use of a separate mercury battery is unnecessary, nor is the system affected by voltage fluctuations.

The Total-Information Viewfinder

The advanced viewfinder system in the Autopak-8 D cameras, another Minolta exclusive, was designed to give you complete creative control over your filming subject. One glance through this total "control-center" provides complete and continuous filming information as your Super-8 film is made. At all times, you'll be able to frame and focus your scene exactly as it will later appear on your screen at home.

This single lens reflex type viewfinder is extraordinarily bright and distortion-free. Focusing is very easy since a rangefinder microprism spot in the viewfinder's center snaps into sharp focus with a simple rotation of the focusing ring. You'll find that this ease-of-focus is possible even when filming with the telephoto lens extended to its full focal length.



20

The D10 Viewfinder

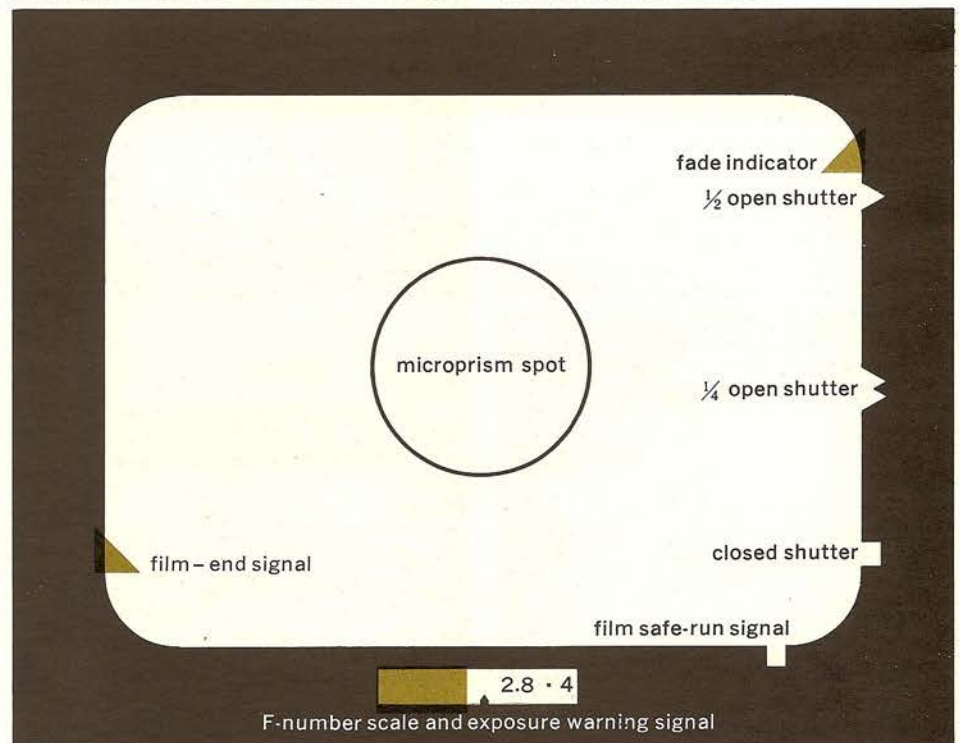
As you look through the D10's viewfinder, you'll discover a variety of information features for better filming. There's a small "window" below the viewfinder that is the *F-number scale* and indicates at a glance the exact F-number at which the film is being exposed. This "window" also serves as the *exposure warning signal*, telling you if there is too much or too little light for correct exposure.

The special "flicker window" located at the bottom right hand corner is the *film safe-run signal*, assurance that your film is being correctly transported. If a malfunction occurs in the film transport, this flicker will cease

and alert you to investigate the source of the trouble.

The *shutter opening fade indicator*, in the upper right corner, lets you view the progress of automatic or manual fades. It moves downward when the variable shutter closes for fade-outs. And upward for fade-ins. When the shutter is fully open, the indicator moves out of view.

The *film end signal*, in the lower left corner tells you that the full 50-foot cartridge of film has been exposed. When the 48-foot and 15-meter graduations register on the footage indicator (on the side of the camera), the film-end signal swings into view as a warning that you have only a small amount of footage left to be exposed.



The D6 Viewfinder

The features of the D6 viewfinder are similar to the viewfinder of the D10. However, since the D6 is incapable of fade-ins and fade-outs, missing from the viewfinder is the shutter-opening fade indicator. The D6 also has a signal at the base of the viewfinder that is the under-exposure lamp and battery checking lamp. This tells you that light is insufficient for correct exposure and also indicates that batteries in the camera's handgrip are at working strength. The D6 is thus equipped with a *dual* under exposure warning (since the exposure warning signal also indicates that light is sufficient for correct exposure), providing you with a double-check system against exposure error.

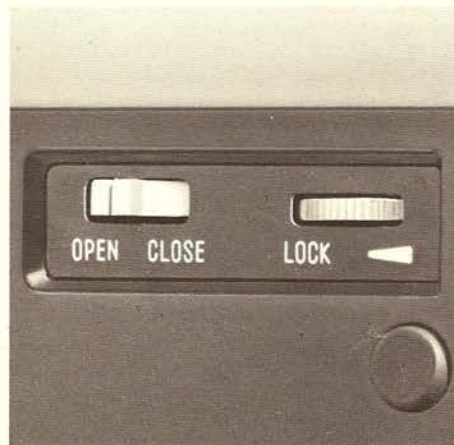
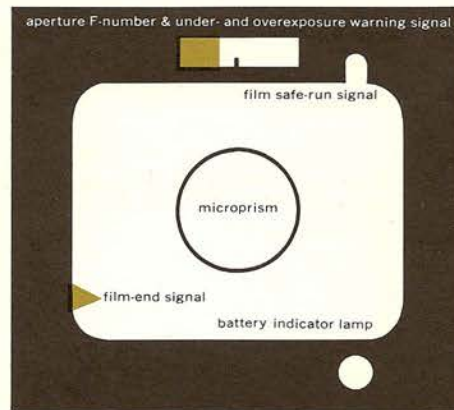
The D6 includes a special viewfinder shutter, which is used to prevent light from entering through the eyepiece when the viewfinder is not used during filming (such as during remote-control and time-lapse photography).

For special vision problems, the D6 comes with a special, built-in adjustable eyepiece (+1 to -4 diopter) that locks into position once it is properly tailored to your eyes. At a glance, the D6 viewfinder looks like this:



The D4 Viewfinder

In addition to the regular D series viewfinder features, the D4 viewfinder has an orange signal at its base which serves as a battery checker. There's also a special viewfinder shutter used to prevent light from entering through the eyepiece when the viewfinder is not used during filming. For special vision problems, the D4 has a built-in, adjustable eyepiece (+1 to -4 diopter) that locks into position once it is tailored to your eyes. The D4 viewfinder, at a glance, looks like this:



22

Other Features of the Autopak-8 D Cameras

Meter Lock

This convenient feature is used to override the meter to keep exposure uniform at a given level regardless of change in background brightness when zooming or panning. With the meter lock set to "on," the camera's electric eye system ceases to operate. The meter lock is also used when you're making single-frame exposure for calculating an F-stop from a guide number while using electronic flash (strobe).

Finder Shutter

The viewfinder of each camera is equipped with this device, placed near the rubber eyepiece cup, to black out the viewfinder to prevent extraneous light from entering through the eyepiece and cause improper exposure measurement. Use of the finder shutter is also recommended when the remote control and wireless control accessories are used, or anytime you're not looking through the viewfinder when filming.

X Sync. Terminal for Strobe

The synchronization terminal permits the use of electronic flash (strobe) at the single-frame setting. Aside from its important uses for individual single-frame exposure, the X sync. terminal is especially convenient for automatic time-lapse photography when one of the two Minolta Intervalometers is used. As an example of the usefulness of this

device, you may make round-the-clock exposures of plant life with electronic flash while paying only minimal attention to the function of the camera. While your camera makes precise single frame exposures, you'll be free to carry on other duties.

Automatic Type A Filter

This is built into the cameras to permit the use of indoor Type A color film outdoors. With a movie light mounted on the camera, the filter automatically moves aside. For manual operation of the filter, a special "screw" is provided.

Uni-Power Source & Battery Checker

Power for the electric eye operation, electromagnetic shutter release, film transport and power zooming of the D series cameras is supplied by AA-size (penlight) 1.5 volt dry batteries installed in the handgrip. This system does not require a mercury battery.

The battery checker incorporates an automatic switch-over system. An on-off master switch for the power source is also provided.

Convenience of Super-8

This universally popular system for 8mm movies is unrivaled for convenience, ease and world-wide availability. Insertion of the Super-8 cartridge automatically sets film speed and positions the filming filter when indoor color film is used outdoors. The image area of the film is nearly 50% larger than other 8mm films.

	Autopak-8 D10	Autopak-8 D6	Autopak-8 D4	
ZOOM ROKKOR LENS	7-70mm (10X) F1.8 17 elements, 13 groups	8.4-50mm (6X) F1.8 14 elements, 12 groups	9.5-38mm (4X) F1.8 12 elements, 10 groups	
POWER ZOOMING	5 speeds	2 speeds	1 speed	
ELECTROMAGNETIC SHUTTER RELEASE	YES	YES	YES	
TTA / SERVO MECHANISM	YES	YES	YES	
AUTOMATIC & MANUAL FADING	YES	NO	NO	
FILMING SPEEDS (fps)	8, 12, 18, 24, (32, 50,)sf	18, 32, sf	18, 32, sf	
TOTAL INFORMATION VIEWFINDER	YES	YES	YES	
UNDEREXPOSURE LAMP	NO	YES	NO	
EXPOSURE ADJUSTMENT	YES ±2 EV	NO	NO	
METER LOCK	YES	YES	YES	
FINDER SHUTTER	YES	YES	YES	
EYEPIECE ADJUSTMENT	YES	YES	YES	
X SYNC. TERMINAL	YES	YES	YES	
AUTOMATIC TYPE A FILTER	YES	YES	YES	
FOOTAGE INDICATOR	YES	YES	YES	
MOVIE LIGHT SOCKET	YES	YES	YES	
BATTERY CHECKER	YES	YES	YES	
FOLDING HAND GRIP	NO	YES	YES	
HI-SPEED POWER PACK	YES (32 and 50 fps)	NO	NO	
INTERVALOMETER-P	YES	YES	YES	
INTERVALOMETER-S	YES	YES	YES	
RELEASE CORD	YES	YES	YES	
REMOTE CONTROL CORD	YES	YES	YES	
TAPE RECORDER CONTROL CORD	YES	YES	YES	
WIRELESS REMOTE CONTROL UNIT	YES	YES	YES	
LENS HOOD	YES	YES	YES	
EYEPIECE HOOD	YES	YES	YES	
FOREHEAD REST	YES	NO	NO	
CLOSE-UP LENS	YES (43-50cm)	YES (40.6-50.8cm)	YES (25-51cm)	
Daylight Artificial light	FILM SPEED RANGE	ASA 10-400 (DIN 14-27) ASA 16-640 (DIN 13-29)	ASA 25-160 (DIN 15-23) ASA 40-250 (DIN 17-25)	ASA 25-160 (DIN 15-23) ASA 40-250 (DIN 17-25)
	POWER SOURCE	Five AA-size batteries	Four AA-size batteries	Four AA-size batteries
	SIZE	70×207×236mm (2¾×8×9¼in)	70×128×196mm (2¾×5×7¾in)	70×127×100mm (2¾×5×4 in)
	WEIGHT	1990gr (70oz)	1250gr (44oz)	1100gr (38.7oz)

OPTIONAL EQUIPMENT

24

The D10: Features and Functions

Almost all the things that you thought a Super-8 camera couldn't do can be done with the Minolta Autopak-8 D10. For the first time in Super-8, one camera is capable of slow-motion, automatic time-lapse and regular and sound filming. You can achieve fully automatic and manual fade-ins and outs. Adjust your exposure meter for special effects or unusual lighting conditions. Expose as few as 8 frames per second and as many as 50. And create visual effects that you're used to seeing only in full-length, professionally made, high-budget films.

A Choice of 7 Filming Speeds

Most Super-8 cameras, even very expensive ones, have a limited choice of filming speeds. Maybe three, maybe four. The Autopak-8 D10 gives you a choice of 7 *different* filming speeds, and unlimited creative expression. The integrated circuit governor motor included in the D10 uses 4 transistors to provide this wide selection of frame speeds; 8, 12, 18, 24, 32, 50 frames per second, plus single frame. Each has a significant use for creative filming.

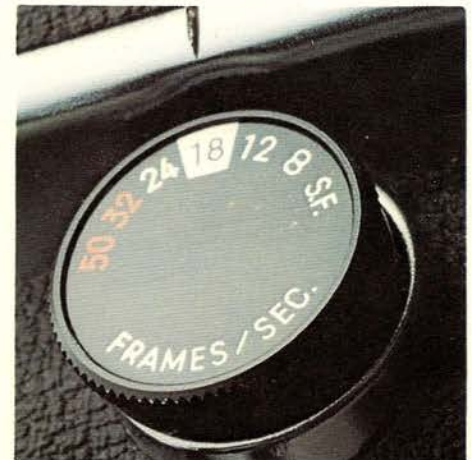
You'll want to use the single frame speed mainly to film titles or animation. And with the use of the D10's electromagnetic release cord, described on page 12, you'll discover animation and other single frame effects are easier to make than ever before.

Speeds of 8 and 12 fps are recommended to emphasize or exaggerate effects of abrupt and speeded-up subject movements. When

you film fast-moving subjects at these speeds, then project them at the standard 18 fps, the effect is cartoon-like, always humorous, with the animated visual movements. These frame speeds may also be used to add dynamic effects to the speed of trains or automobiles.

Most of the time, you'll use the normal filming speed of 18 fps. This is recommended for all general filming for natural effects and great film economy. The 24 fps speed is appropriate when recording sound for your film, or to smooth subject or camera movement.

Speeds of 32 and 50 fps are excellent for slow-motion effects, especially when you're filming scenes of the sea, children playing, plants swaying in the wind or sporting events. These speeds can only be attained with the Minolta Hi-Speed Power Pack, which attaches to the top of the D10.



25

The Automatic, Variable Shutter Opening System

Professional moviemaking touches, such as automatic and manual fade-ins and fade-outs, are possible with the Autopak-8 D10, and no other. New cinematic expressions, such as simultaneous zooming and fading, or simultaneous fading and single-frame title or animation filming, are now as easy to accomplish with the D10 as conventional filming is with other cameras.

The combination of the D10's 7 filming speeds and its exclusive variable rotary shutter opening system gives you a variety of unconventional filming advantages. One key advantage is a choice of a wide number of exposure times, or shutter speeds.

The exposure of an 8mm movie camera is commonly determined by the relationship of its aperture to the rotary speed of its shutter changeable with the frame speed. But there are great limitations to this system, because the exposure time (or shutter speed) *must* change when the frame speed changes. This leaves the photographer little, or no, creative choice.

With the Autopak-8 D10 you can change the opening of the rotary shutter from a full-open 160° to a full close at 0°, or to two stops (80° and 40°) in-between. What this means is that changes of exposure time are possible *without* changing the frame speed. The result of this system is a choice for you of *10 different exposure times* under normal D10 filming conditions. And *5 additional exposure times* when the Hi-Speed Power Pack is attached to the camera.

Ultra High-Speed Filming

With the Minolta Hi-Speed Power Pack attached to the D10, you can achieve incredibly fast shutter speeds: up to 1/450 second. This speed, which gives unusual slow motion effects when projected at the standard speed of 18 fps, is accomplished by setting the shutter sector at 1/4 open while filming at 50 frames per second. Use of this ultra fast shutter speed is especially valuable for scientific and educational films, for filming sports scenes, physical impacts, the habits of wildlife and other phenomena for minute analysis.



Exposure Times

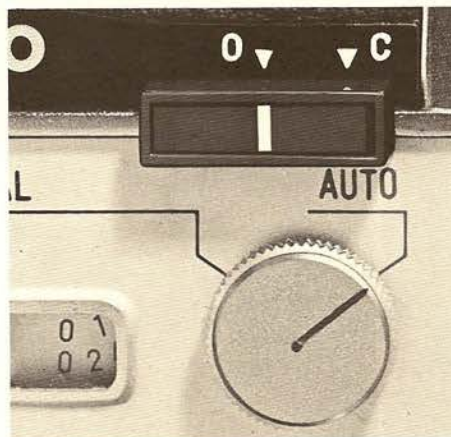
Frame Speeds	Shutter Openings		
	Full Open	1/2 Open	1/4 Open
8 fps.	1/18 sec.	1/36 sec.	1/72 sec.
12	1/27	1/54	1/108
18	1/40	1/80	1/160
24	1/54	1/108	1/216
32	1/72	1/144	1/288
50	1/90	1/180	1/450

26

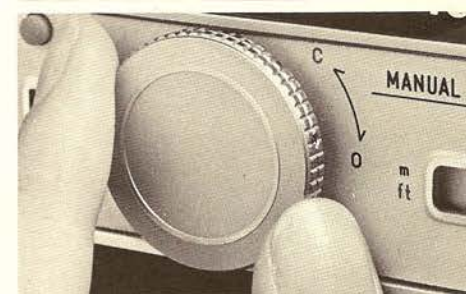
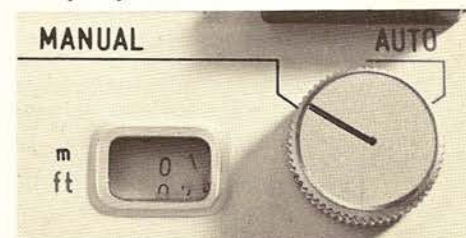
Automatic and Manual Fading

Fully automatic and manual fade controls are other Super-8 exclusives with the D10. These controls are also made possible by the D10's variable shutter opening system.

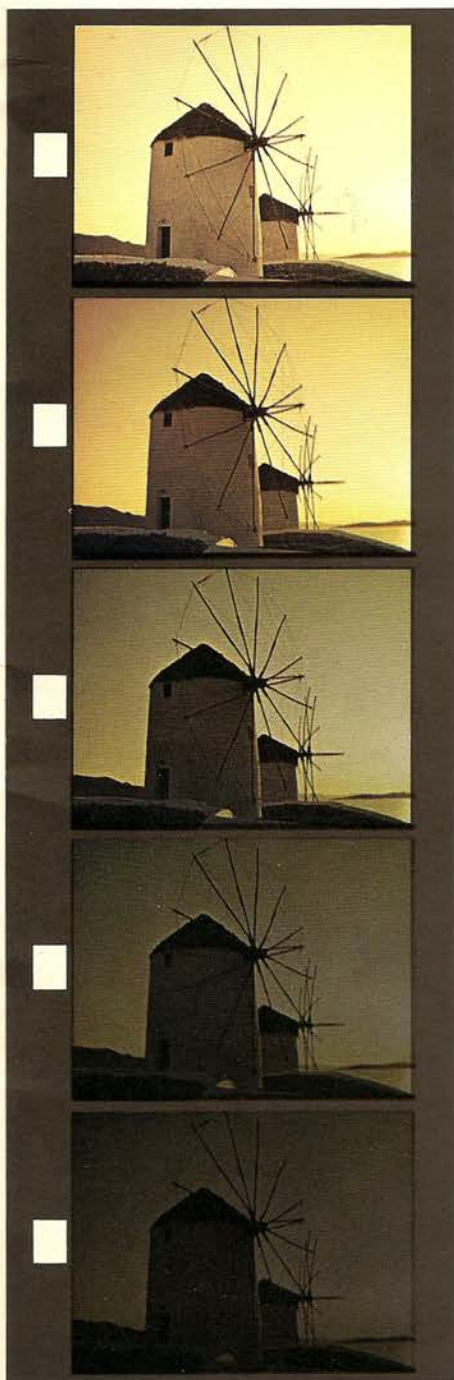
Automatic fading is accomplished with incomparable ease. You set the auto/manual fading selector to AUTO, slide the fade-in/out selector to either "O" ("open" for fade-ins) or to "C" ("close" for fade-outs), and begin or continue to film. As the fade automatically progresses, you'll see the fade indicator in the upper right corner of the viewfinder begin to move up or down to indicate variations in the shutter opening. This automatic system completely opens or closes the D10's shutter sector in about 3 seconds at 18 frames per second, or in about 2.2 seconds at 24 fps.



With this system, you can fade in a scene after normal filming, resume normal filming after a fade-out, or make easy manual fades by controlling the shutter sector as rapidly or slowly as you desire.



The unparalleled advantage of this versatile fading system is the tremendous degree of creative freedom it offers you. While you watch the progress of your fade through the viewfinder, you'll be able to perform a variety of cinematic expressions that up until now had never been possible with any 8mm camera. With constant use and experimentation with the D10, you'll discover all sorts of new, imaginative ways to express yourself on film.



Exposure Adjustment

The D10's electric eye system and aperture adjustment system permit manual compensations for special effects or unusual lighting conditions of $\pm 2EV$. This allows proper exposure adjustment for most unusual lighting situations that might confront you.

Graduations for both under-and over-exposure sides are 0.5, 1.0, 1.5 and 2EV. The overexposure side is recommended when you're filming backlit subjects, those against a very light background, or to make proper exposure compensation when the variable shutter is set at 1/2 or 1/4 open. The underexposure side may be used for filming spotlighted subjects, or subjects that stand bright against a large dark background, or for achieving distinct special effects.



28

Other Autopak-8 D System Accessories

1A Skylight Filter

Transparent to the eye and without a filter factor, the 1A skylight filter absorbs ultra-violet rays to give sharper color and greater black-and-white contrast to all films. It may also be used as a lens protector.

Close-Up Lens

Attaches easily to the zoom lens of each camera, permits close-up filming of titles and portraits. Requires no special focusing. With close-up lens in place, normal zooming is still possible.

Lens Hood

Designed to prevent lens flare when filming takes place in strong, direct light. Also protects barrel and lens from rain or snow when filming is done in adverse weather.

Oversize Eyepiece Hood

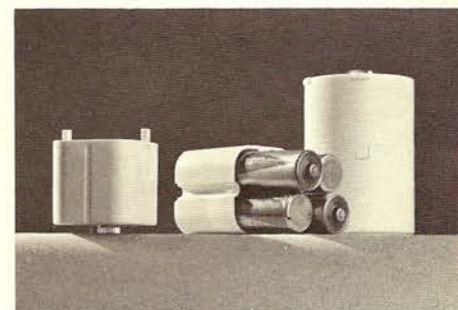
Used to prevent extraneous light from entering the viewfinder when filming with the naked eye. Made of soft, flexible rubber, easily attached to the viewfinder.

Battery Magazine

A convenient accessory for lengthy filming sessions. Holds either 5 or 4 batteries (depending on the camera used), is interchangeable with the battery case that fits in the camera's handgrip.

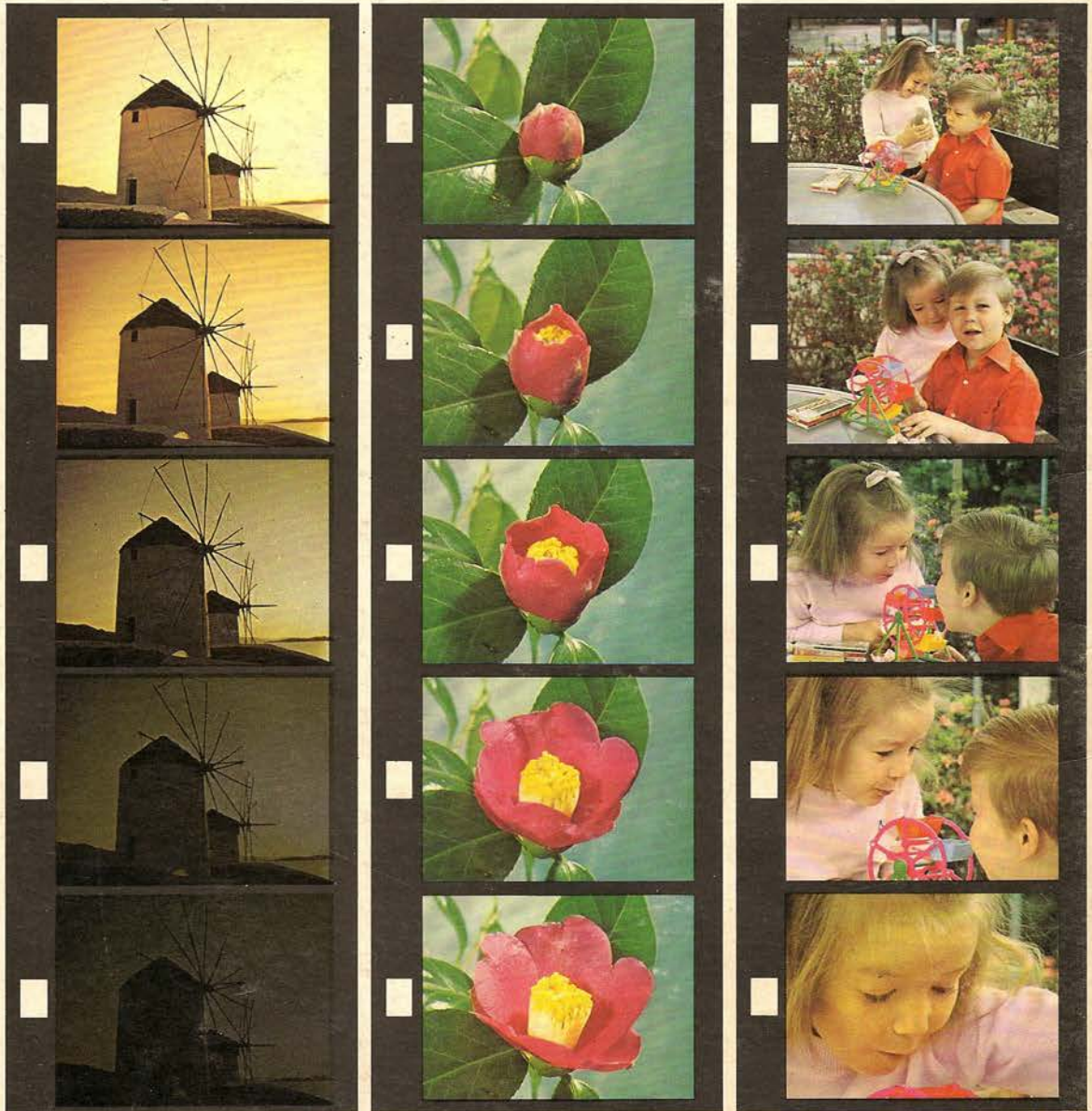
Forehead Rest

A head support, for the D10 only, that slips into the accessory shoe to provide additional camera stability.



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