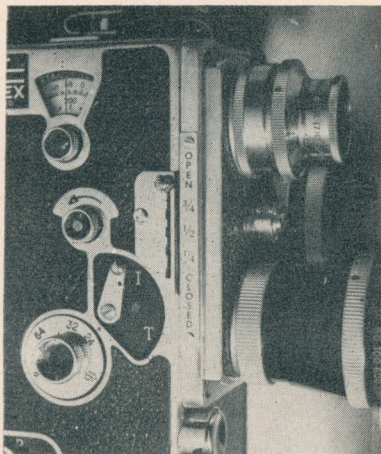


# **INFORMATION BOOKLET** **on the**



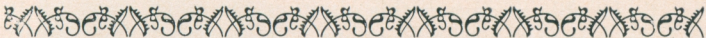
**PELLEGRINI-PIEK**  
**VARIABLE SHUTTER UNITS**  
**FOR BOLEX H16, H8**  
**AND H16 REFLEX**

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— Seventh Edition —





## FOREWORD

The Variable Shutter described in this booklet was modeled after the same UNIT SYSTEM developed over twenty-five years ago. It was accepted then as it is today, as standard by camera manufacturers for their most expensive cameras.

Adapting the same UNIT SYSTEM to all Bolex H cameras was a mechanical achievement, because only a few years ago engineers had considered this task an impossibility due to the limited space in the camera. Not only has this system been proven to give excellent results with both the H-16 and H-8 cameras used by movie makers throughout the world since 1952, but it remains the ONLY unit today which can be installed in the H-8 and to accept the automatic dissolve attachment on all Model H cameras.

## WHAT IS A "VARIABLE SLOT MOTION PICTURE CAMERA SHUTTER"

To be able to answer this question, one must first refer to the two very important functions of a regular motion picture camera shutter.

Taking the first one from the meaning of the word **shutter**, we find **shut**—to close, to bar, to forbid entrance into—as in the case of a motion picture camera—to shut out by a blind light which might reach the film while the camera is idle or while camera is in motion during filming. During filming, the use of the shutter is necessitated because if light was permitted to reach the film while change of frame in the gate aperture was in progress, streaky and blurry pictures would result.

The second function is just the opposite of the first. This time it is to allow light or an image when adjusted by the lens to reach the film and hold it there for a specific length of time to form an impression later to be viewed as a picture. Now then, when we mention shutter speeds we are referring to the different amount of time required for any film to receive necessary exposure to light.

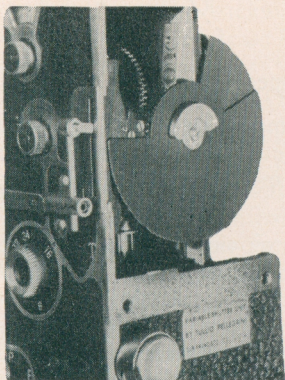
The mechanical structure of a motion picture camera shutter is usually of the disk type, meaning a flat circular blade cut out at about 180 degrees, giving it the form of a half moon. During filming this disk is set synchronously in motion so that while the cutaway portion will determine the amount of light to reach the film the half disk portion or blind will bar any light from reaching inside the camera while change of frame in the gate aperture is in progress.

Having analyzed these facts, we can now define the variable shutter with ease, thus answering our primary question.

A variable slot motion picture camera shutter is a shutter



incorporating not one, but two half disks placed superimposed (see Fig. 2) so that at any desirable time, by means of a lever, one of these disks may be advanced in respect to the other in a revolving manner as to form a partially or complete full disk or blind.



**Fig. 2**  
**Shutter Set At  $\frac{3}{4}$  Open**

It is only in this manner that faster shutter speeds, up to where no exposure at all will be registered on the film, can be obtained.

## THE UNIT

When the principles of the idea are transferred to the actual mechanical device, we find that a series of parts are

needed. Five of these parts are gears used to form the differential block which, with the aid of three swiveling bars and a control handle and other miscellaneous parts, forms the unit for advancing or retarding the auxiliary shutter disk. If you refer to the outside of the camera (see front cover), you will find the control handle inserted through a guide which is conveniently slotted at five different places for the reason of arresting the lever at any one of the following positions: **Open,  $\frac{3}{4}$  Open,  $\frac{1}{2}$  Open,  $\frac{1}{4}$  Open and Closed.** By usage of the lever, you will be able to obtain the following different shutter speeds:

		Open	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{4}$
True*	8 frames per second	1/18	Sec. 1/26	1/35	1/70
True*	16 frames per second	1/35	Sec. 1/53	1/70	1/140
True*	24 frames per second	1/53	Sec. 1/70	1/105	1/210
True*	32 frames per second	1/70	Sec. 1/105	1/140	1/280
True*	64 frames per second	1/140	Sec. 1/210	1/280	1/560

To obtain same light exposure while increasing shutter speed, increase lens f:stop.....

	$\frac{1}{2}$	1	2
Example:	f:8	f:6.3	f:5.6
			f:4

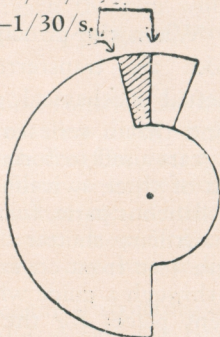
Reverse when decreasing shutter speed.

\*Any discrepancy between camera speed button setting and true speed must be ascertained. Note — Camera speeds determine fast, normal, and slow motion. Shutter speeds determine different exposures.

The original disk angle of most movie cameras varies from 170 Deg. and up (see “other information” also).

180 DEG.— $1/32/s.$

170 DEG.— $1/30/s.$



Speed of 16 F.P.S.

Fig. 3

to the lever guide with **Open**,  $\frac{1}{2}$ , and **Closed** in red color and  $\frac{3}{4}$  and  $\frac{1}{4}$  in black color will assist you in recognizing your shutter speed settings.

Of the utmost importance is the WARNING SOUND DEVICE audible only when shutter is in closed position during filming or hand-cranking either way. This means that you

Assuming that you have two disks of 170 degrees, you will find it impossible to form a complete blind when they are fully spread. An angle, larger than 180 degrees, as seen in Fig. No. 3, equivalent to  $1/35$  S. exposure at 16 F.P.S. was chosen to insure no open gaps with a closed shutter.

A stamped word plate placed parallel



are always alerted whenever you are shooting blank film whether done unintentionally, or purposely while engaged in hand-cranking film backwards. This is usually done for double exposures, as in the case of the lap dissolve, which shall be explained later.

## HOW TO USE THE UNIT

The unit has been so designed that its operation from the outside of the camera is rendered fairly simple. A few trials with an empty camera will prove this statement.

The control handle has been placed at a very convenient spot on the camera to facilitate its operation with one hand. While the index finger is engaged in pressing the filming button, the thumb remains precisely in line with the lever, thus enabling you to lower or raise the control handle at will. There are other ways that you can manipulate the handle but it is advisable to practice on the one suggested, for, learning it this way will place the shutter unit at your command at all times even when filming without the aid of a tripod.

### FADE-IN

You may realize the importance of this first advantage by being reminded of the fact that all professional motion pictures start with a fade in.

By bringing the lever to the **Closed** position you are ready to start. As you press the filming button with the index finger, gradually slide shutter lever with the thumb toward **Open**. At the termination of the lever movement, a slight releasing of your thumb will cause the lever to drop automatically into the **Open** slot signifying that your fade in is completed. Continue filming the opening scene as long as desired. A two or three second fade in is most pleasing.

### FADE-OUT

A fade out is exactly the reverse of a fade in. This time you start shooting the scene with the lever at the **Open** position. Film for so many desired seconds then gradually begin

sliding the lever toward **Closed** position. At the termination of the lever movement or when warning sound becomes audible, release both the lever and the filming button at once. It is essential that you learn your fade ins and fade outs correctly for they are the fundamentals of a perfect lap dissolve. (All professional movies end with a fade out.)

## LAP DISSOLVE

A lap dissolve is the most pleasantly observed scene change. A lap dissolve is accomplished by superimposing a fade in and a fade out on the same strip of film.

The first procedure is to make a smooth fade out of a scene. Leave the shutter control handle at the closed position at the end of the fade out and ignore it until you start filming again. Since you have to superimpose a fade in on the same strip of film that your fade out is on, you will have to handcrank the film backwards approximately the same amount of frames required for the fade out. With the lever at the **Closed** position, or while warning sound is audible, you may feel perfectly safe that no light will penetrate, even without recapping the lens. If your fade out took three seconds at 16 F.P.S., you should handcrank backwards 48 frames. If the fade out was of a longer or a shorter duration, calculate accordingly.

You are now ready to complete the lap dissolve, adjust the lens opening for the next scene. Proceed with the fade in as already explained, always remembering the duration of your fade out, of course.

This procedure might sound complicated, but actually it is not. If a fade out and a fade in are rather simple to accomplish, a little mathematics and a short handcranking backwards should not be difficult. You can always practice with an empty camera for the first few days.

THE AUTOMATIC DISSOLVE ATTACHMENT (Fig. 4) is available and installed exclusively at our shop. It's optional at extra cost of \$57.00 at time of shutter installation,



otherwise \$66.00, for all H cameras and Bolex RX. (Prices subject to change without notice.) **INCLUDE REWIND CRANK FOR THIS INSTALLATION.** The Unit operates as follows:

To make a fade out, the camera must be operated with the camera side starter button in **LOCKED POSITION** . . . and not **FINGER HELD**. If start button is finger held, the camera will not stop automatically when the shutter lever reaches the

closed position. So . . . with the camera running and starter button locked, push down on the dissolve attachment operating lever (placed toward footage indicator) . . . and hold down till camera stops automatically. If a dissolve is desired . . . back up the film 50 frames. Then . . . with the **operating lever held up**, start the camera . . . and **hold the lever up till the shutter has fully opened**; continue filming to end of scene. If a fade out only is required . . . it is obvious

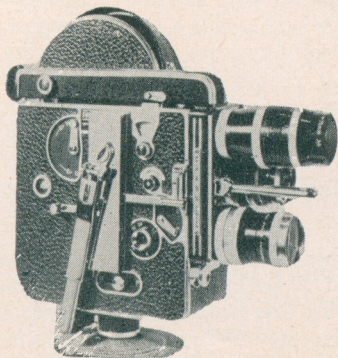


Fig. 4

that backwinding will not be necessary. **The dissolve attachment** closes or opens the shutter in approximately 48 frames. Cameras vary . . . but, a frame or two over or under will not matter. The important thing is to **backwind 50 frames** to allow an overlap . . . It is possible to make a dissolve from a slow motion shot to a fast motion shot . . . or from any one of the camera speeds to any other camera speed including single frame filming. However, **the same number of frames** are to be backwound in all cases.

To set shutter manually at the one quarter . . . one half . . . or three quarter open position . . . as well as at 'Closed' or

'Full Open' proceed as follows: Grasp front arm connecting shutter control handle as close to attachment housing as possible . . . and push in the direction desired, while working the operating lever up and down slightly. The lock will snap into position when the operating lever is released.

## SMOOTH CHANGES OF EXPOSURE WHILE PANNING

Many times we are compelled to pan or tilt for a scene whether it is a panoramic one or whether it is a moving object.

In doing this we find that correct exposure at the beginning of the scene may differ from the correct exposure at the end of it, sometimes up to two full f: stops. Of course, the right thing to do if you do not possess a variable shutter is to compensate by setting the exposure at the middle with the lens. But, wouldn't it be better if the correct exposure could be attained all the way?

Referring to the exposure table, you will find that you can change shutter speeds from  $1/35$  S. to  $1/140$  S. at 16 F.P.S., equivalent to two full f: stops. In fact at any camera speed, you have equivalent f: stop changes. When panning from dark to light, cut down the exposure by simply increasing the shutter speed. The trick to this procedure is to feel the slots on the guide by putting a minimum pressure on the control handle while sliding it.

The first slot is equivalent to  $1/2$  f: stop, the second slot to one full f: stop, the third slot to two full f: stops. For panning from light to dark, establish the correct exposure at the end of the scene with the shutter at **Open** or  $1/35$  S. exposure for 16 F.P.S. Leave the lens set there. Then back-track shutter handle, setting it at  $3/4$  **open** for  $1/2$  f: stop, at  $1/2$  **open** for 1 full f: stop, or at  $1/4$  **open** for 2 full f: stops. Start your scene in the light and, as you proceed toward the dark side, decrease the shutter speed by sliding the control handle toward the **Open** position.



While changing the shutter speed you have attained the correct exposure all the way while in no way having altered the true motion of your picture.

## **CLEARER ACTION SCENE PICTURES WITH FASTER SHUTTER SPEEDS**

The title used for this advantage explains for itself its true value. One look at a regular snapshot that has been taken at the time of some fast unexpected action will demonstrate to you exactly the inadequacy of a slow shutter for action scenes.

With a shutter speed of  $1/140$  S. at  $\frac{1}{4}$  OP, 16 F.P.S., or all the way to  $1/560$  S. at 64 F.P.S., same setting, will enable you to take clear pictures of almost any action of your favorite sport or scenes shot from a fast moving vehicle. This feature will be of the utmost value to the one who has the hobby or profession of making enlargements from his motion picture scenes.

## **NO NEUTRAL DENSITY FILTERS NEEDED FOR FAST FILMS USED OUTDOORS**

Most of us, no doubt, want to film color pictures. But, in some cases, the requirement of a real fast film for shooting under poor light conditions is a must. As long as all your filming is concentrated indoors with this fast film everything will be satisfactory. But, should you have to alternate from there to outdoors then you will encounter difficulties involving correct exposures. Here is where your faster shutter speed will aid you once again. With a lens aperture of  $f:22$  and a shutter speed of  $1/140$  S.,  $\frac{1}{4}$  Op. at 16 F.P.S., you may use films with 100 speed Weston Rating outdoors when your color film would normally call for an  $f:2$  at  $1/35$  S. shutter speed. Without one or more (if you desire one for each lens) neutral density filters, you will find not only that you save time when a switch to different lenses is required, but that you also save money.

## USE WITH A REFLEX CAMERA

A variable shutter in this camera can be of advantage in letting more light reach the eye through this viewing apparatus. Any scene can be filmed with two (2) larger stops of any lens, providing the shutter has been set at  $\frac{1}{4}$  **Open**. This is so because the image becomes split for viewing at the prism site and the shutter controls the exposure behind the prism.

## MISCELLANEOUS ADVANTAGES

There might be a few other ways that you yourself can think of for making use of this unit. Here are a few of them worth while remembering.

Replacing the old wiping devices when switching to stereo movies, while using the Pan Cinor (Zoom) Lens or using large screen attachments.

Changing of lever position from **Open** to  $\frac{3}{4}$  **Open** when alternating from a steady run to a single frame device without changing f: stop for lens aperture.

Leaving the control lever at the **Closed** position when the camera is left with partially exposed film in it and making a notation of the exposed portion by referring to the footage and frame counter indications. (Should the camera then be run accidentally a handcranking back to the original position can be made without losing a single frame of film.)

## PROCEDURE FOR AN INSTALLMENT

Unfortunately, it is not possible for you to buy a unit and install it yourself.

A perfect resynchronization of the shutter and an accurate resealing of the turret mount against any light leaks are needed. It is hoped that the reward you will get from an installed unit will compensate for the inconvenience caused to you by having to send the camera to us.



The camera should be sent completely stripped except for the film gate plate and lid (no viewers, lenses, or spools). But, if you have an auxiliary attachment screwed onto the outside of the camera (this includes an outside frame counter and reflex viewer) leave them on. Take care of insuring your camera. When you pay for this procedure, the rest will be up to us. For the time starting when the camera reaches our hands, the time we work on it, and until it is back in your hands again, the insurance coverages and mailing expenses will be paid by us. Insurance rules state that you must refrain from any mention of photographic equipment on packages. Address packages to:

**PELLEGRINI - PIEK**  
**PELLEGRINI POKER CAMERA ACCESSORIES**  
**634 HEARST AVE.**  
**1545 Lombard Street**  
**SAN FRANCISCO 12, CALIF.**

San Francisco 23, California, U.S.A.

All extra costs, such as custom duties (if any), taxes, insurance, and shipping expenses, for cameras sent from outside the United States must be prepaid by you. This includes both ingoing and outgoing expenses.

A postcard mailed to us at the time of your camera shipment informing us of your action, including the serial number of the camera and your address, will insure a quicker return to you. Arrival here of your camera will be acknowledged. Your camera will be diligently worked on and tested, by exposing a strip of film against any defects or light leaks, and quickly mailed back to you. You may rest assured that the work done on the camera will not alter the focus in any way. The flawless construction of the camera renders this impossible. **The camera mechanism requires no alterations whatsoever.** The Reflex Turret incorporating film gate and prism, and the supreme turret are removed and reinserted as entire units with absolutely no alteration also.

## PRICES

Effective as of Jan. 1, 1958

All Models H-8, H-16 and H-16 Reflex.....\$125.00

Automatic Dissolve Attachment Extra

This includes camera transportation back to you, insurance coverages, and a one-year guarantee. Local and state taxes, where applicable, extra. Money may be mailed in advance. A certified personal check or a money order will do. Otherwise, if more convenient, you may order C.O.D.

Prices subject to change without notice.

## GUARANTEE

Guarantee is as follows:

The Variable Shutter Unit is guaranteed unconditionally for the period of one year to the original purchaser against defective materials and faulty workmanship. Repair will be made without charge providing only that transportation back is prepaid. The guarantee period will commence with date written on guarantee card. The guarantee card will be placed inside the camera at the time of shipment and on the back of it will be the table of camera and shutter speeds.

## OTHER INFORMATION

The Variable Shutter Unit does not interfere with any of the original features of the camera or attachments, such as, the battery or synchronous motors, the filter slots behind the lens, the one with the mask or the round one, present on the older types of cameras.

The use of the Stereo Attachment or the Pan Cinor Lens do not interfere with the Variable Shutter or vice-versa, but the PLUG SCREW which holds the turret firm during the



use of these two accessories must be shortened to clear the top shutter's disk. Plug must be inclosed with camera to be shortened here. (Not necessary with the Supreme or Reflex models.)

The introduction of the new shutter does not alter the original distance from the lens base to the film plane, neither will it slow down the original speeds of the camera nor over-expose the first frame of take anymore than yours or any other camera would normally do.

The film plane mark engraved at one side of your camera, will be automatically removed when the lever guide is introduced but the bottom part of anyone of the notches on the guide is within approximately  $1/64$  of an inch from this original mark.

Cameras with number higher than 100,000 (circa) have a new claw system and a faster shutter,  $1/40$  second at 16 F.P.S. When the variable shutter is installed on these cameras, the exposure is slightly increased, but insignificantly noticeable for having to make any lens closure correction.

It should be in the interest of every camera owner to be sure that his camera (new or old) is in perfect working condition. POSSIBLY BY HAVING SHOT AT LEAST FIVE ROLLS OF FILM, before the camera is sent in for the Variable Shutter job. The guarantee does not cover any repair or adjustment needed to any other part of the camera other than those pertaining to the shutter unit itself.

415 *area code* PELLEGRINI-PIEK

634 HEARST AVENUE SAN FRANCISCO 12, CALIF.

Phone DElaware 3-0540

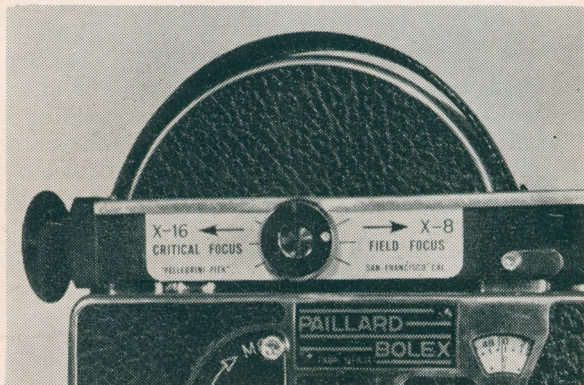
San Francisco 23, California

## CONCLUSION

There are times when we just can't make our wishes come true, in most cases, for financial reasons. For the time being, you may take beautiful movies without adding this unit to your camera. Meanwhile, go ahead and answer the call of movie making. Set your camera and tripod; fix the exposure; focus right; watch the photographic and color compositions, parallax, lens cap; take a deep breath—shoot; don't pan too fast; count seconds—6·7·8 stop. Relax and breathe easy, light a smoke, look the camera over, so on and so on until the next scene.

As you are later thrilled or perhaps disappointed in viewing for the first time those magnificent vacation scenes—the baby picture, the trip in the snow, etc.—do remember the few more improvements you could have added to your movies if you **only** had a variable shutter!

---



Control knob conveniently placed and easy to operate.

Also  
**DUAL POWER VIEWER FOR BOLEX REFLEX**



# GUARANTEE

I guarantee the variable shutter unit unconditionally for the period of one year from date appearing on this card to the original purchaser against defective materials and faulty workmanship. Repairs will be made without charge providing only that transportation back to us is prepaid.

TULLIO PELLEGRINI.

Date December 1961

Camera No. H-8 142849 (Life on YOLO)

(Over)

# TABLE OF CAMERA AND SHUTTER SPEEDS

Shutter Settings					Open	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{4}$
True*	8	Frames	Per	Second.....	1/18	1/26	1/35	1/70
"	16	"	"	".....	1/35	1/53	1/70	1/140
"	24	"	"	".....	1/53	1/70	1/105	1/210
"	32	"	"	".....	1/70	1/105	1/140	1/280
"	64	"	"	".....	1/140	1/210	1/280	1/560

To obtain same light exposure while increasing shutter speed, increase lens f: stop .....

Example .....	f:8	$f:\frac{1}{2}$ 6.3	f:5.6	f:4
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Reverse when decreasing shutter speed.

Single frame exposure when camera speed set at 8 F.P.S., at Open., 1/20 S.

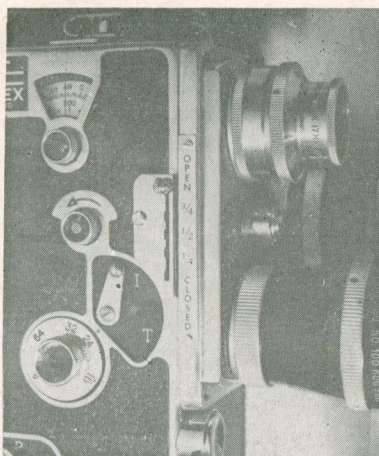
Single frame exposure for all other speeds, shutter at OPEN, 1/25 S.

\*Any discrepancy between camera speed button setting and true speed must be ascertained.

NOTE: Camera speeds determine fast, normal, and slow motion; shutter speeds determine different exposures.

(Over)





MANUALLY OPERATED

## VARIABLE SHUTTER UNITS

FOR

## ALL BOLEX H CAMERAS

(BALANCED)

Every installation equipped with a **WARNING SOUND** when shutter at closed position.

ONE FULL YEAR UNCONDITIONALLY GUARANTEED

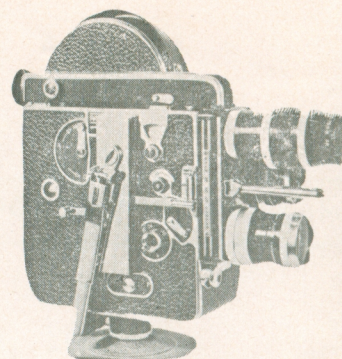
### PELLEGRINI - PIEK

1545 LOMBARD STREET

SAN FRANCISCO 23, CALIF.

Graystone 4-5340

Delaware 3-0540



WITH AUTOMATIC DISSOLVE ATTACHMENT

✓ A PRECISION BUILT-IN DEVICE FOR MANY PURPOSES

✓ FADE-INS

✓ FADE OUTS

✓ LAP-DISSOLVES

(The Professional Touch)

- ✓ SMOOTH CHANGES OF EXPOSURES WHILE PANNING (for unevenly lighted areas).
- ✓ CLEARER ACTION SCENE WITH FASTER SHUTTER SPEEDS (from 1/18 sec. at 8 F.P.S. to 1/560 sec. at 64 F.P.S.)
- ✓ NO NEUTRAL DENSITY FILTERS NEEDED FOR FAST FILM USED OUTDOORS.
- ✓ MORE LIGHT AVAILABLE FOR REFLEX VIEWING (a 2 lens stop gain when shutter set at 1/4 open).

THE AUTOMATIC DISSOLVE ATTACHMENT (optional at extra cost and available exclusively at our shop) enables the movie maker to accomplish perfect lap dissolves regardless of different camera speeds. STOPS camera automatically at end of fade out and incorporates the five notches for all the shutter settings.

Thousands of amateur and professional movie makers the world over use and recommend our custom made devices.

NO DELAYS. Every job is delivered within a few days of camera arrival.

Our installations do not interfere with any of the fine Bolex features. The only alteration obviously necessary is to provide an opening for the control lever. EVERY CAMERA IS FILM TESTED and proof of it sent to its owner.

Work on both installation is carried out at our shop. Ship camera stripped of all lenses, octameter, spools or any extra attachments. For cameras other than Supreme and Reflex include turret plug screw used with ZOOMAR. For automatic dissolve attachment INCLUDE REWIND CRANK.

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PRICES: Shutters for all Bolex H Cameras (8, 16 or RX.).....	\$125.00
Automatic dissolve attachment at time of shutter installation.....	57.00
Automatic dissolve attachment installed later .....	66.00
Return postage (within U. S.) paid by us.	

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Also dual power viewer for the Bolex Reflex



# PELEGRINI-PIEK

634 HEARST AVENUE  
SAN FRANCISCO 12, CALIF.

VARIABLE SHUTTERS • DUAL POWER VIEWERS • ACCESSORIES FOR MOVIE CAMERAS

August 29, 1961

Orville H Stout  
Route # 2 Box 447  
Ridgefield, Washington

Dear Sir:

Your letter arrived only today as it was delayed via our old address.


Our pamphlet is enclosed which should answer your points #1 and # 2  
The Automatic dissolve attachment fits on same place as motor would, and  
therefore it is to be removed (merely by turning the crank clockwise and  
lifting it off.) The Shutter is then to be operated manually.

It takes us about one week to make the installation.

We hope to hear from you again soon and be of service to you.

Please note our change of address.

Sincerely yours,



Jan Z. Piek  
Pellegrini-Piek

JZP:hp

PRICES: Shutter for all Solar & Cine (7-1/2" or 8-1/2")	\$125.00
Automatic dissolve attachment at time of shutter installation	\$7.00
Automatic dissolve attachment installed later	\$6.00
Return postage (within U. S.) paid by us.	

Also dual power viewer for the Bolex Reflex