



Wollensak
'X' SYNCHROMATIC
RAPAX SHUTTER

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X SYNCHROMATIC

This between-the-lens photographic shutter is an extremely precise high-speed instrument which has been built to the exacting tolerances of a fine watch at the Wollensak Optical Company. Only skilled mechanics with many years of experience are permitted to assemble such a fine instrument; with reasonable care it will serve faithfully for many years, by rendering accurate and dependable exposures.

An accurately fitted train of watch gears and pinions, working in connection with a series of levers and carefully tempered springs, assures dependably uniform, properly-timed exposures—the essence of good and well-timed negatives.

In designing the "X" Synchromatic RAPAX Shutter, every consideration was given to the fact that instruments of this type are sometimes subjected to continuous and often hard usage.

Nevertheless, the "X" Synchromatic RAPAX is a highly sensitive instrument, and should be handled carefully . . . just as you would any valuable timepiece.

★ TO PRE-SET THE SHUTTER

The "X" Synchromatic RAPAX Shutter is a pre-setting type of shutter; before exposure can be made, the shutter must be set or "cocked." This is accomplished by moving the setting lever, extending from the top of the shutter, *to the right*—the full length of the slot in the dust shield attached to the lever. The shutter is now set, and ready for making the exposure by pressure on the cable release, or by pressing on the release lever located on the left-hand side of the shutter.



The "X" Synchromatic RAPAX Shutter, because of the short, smooth action of the release lever, can be used with any external solenoid or tripper for synchronized flash with either Class F or Class M lamps.

★ TO OPERATE

The markings on the speed dial represent the fractional parts of a second, i. e.: T,

Time; B, Bulb; 1, 1 Sec.; 2, $\frac{1}{2}$ Sec.; 5, $\frac{1}{5}$ Sec.; 10, $\frac{1}{10}$ Sec.; 25, $\frac{1}{25}$ Sec.; 50, $\frac{1}{50}$ Sec.; 100, $\frac{1}{100}$ Sec., etc.

FOR TIME EXPOSURES

"T" or *Time Exposure* is used for exposures of long duration. Turn the speed cam (the outside knurled disc) until the letter "T" is at the indicating line on the shutter. Set the shutter with the lever on the top, and release by pressure on the lever on the left-hand side of the shutter, or by cable release. This action will cause the blades to open and remain open until the release lever is again tripped (in the same direction) to close the blades.

NEVER reset the shutter when the blades are open; damage to the shutter may result.

FOR BULB EXPOSURES

"B" or *Bulb Exposure* is used also for making prolonged exposures. Set the speed indicator to "B" and set the shutter as outlined above; then trip the release lever or press on the cable release. This will open the shutter and keep it open as long as pressure is maintained. As soon as pressure is released, the shutter will close.

FOR INSTANTANEOUS EXPOSURES

Turn the speed cam to the exposure desired, and set the shutter. (When setting to 1/400 sec., a slight additional pressure is required to overcome the resistance of the booster spring.) To release, just press the cable release or release lever on the left side of the shutter. No harm will befall the shutter if the speed indicator is set between any two given markings; but for correct exposures, it is more satisfactory to set the indicator accurately at the desired exposure.

Speed of the shutter, if used at intermediate settings, is not guaranteed at those settings.

FOR QUICK GROUND-GLASS FOCUSING

It is not necessary, as with conventional shutters, to change the setting of the speed ring to Time to open the shutter blades, move the ring back to the selected setting after focusing, and recock the shutter before exposing. Leave the speed ring set at the selected speed (any speed from Bulb to 1/400 sec.) merely cock the shutter and depress the Press-focus lever clockwise. This

action will open the blades and keep them open until you have focused.

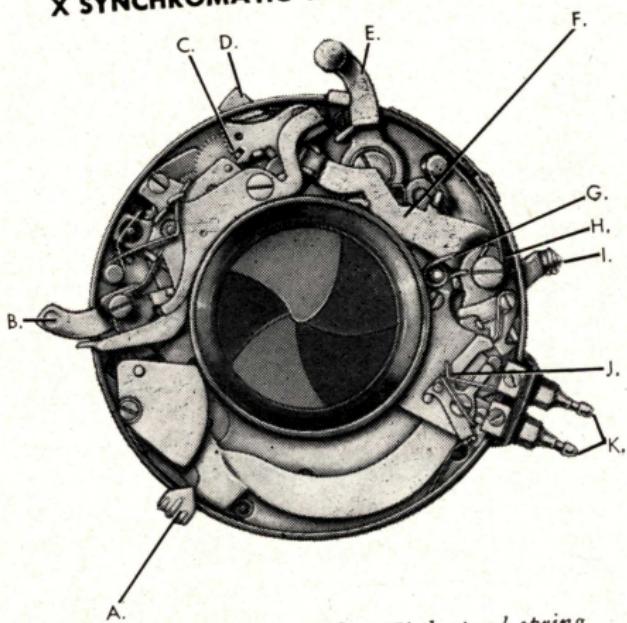
To close the blades, just lift the Press-focus lever counterclockwise to its original position. Since the shutter has already been cocked, you are ready to trip the release lever for an exposure. Although the shutter *must* be cocked before using the Press-focus lever it is *not* necessary to recock the shutter before exposing.

★ TO OPERATE THE SHUTTER FOR SYNCHRONIZED FLASH

The "X" Synchromatic Rapax Shutter features built-in electrical contacts for flashing the "X" type (also known as "trigger type," "O" type, and thyratron trigger type) electronic high speed lamp in synchronization at all shutter speeds including 1/400 second.

If ordinary flash lamps (Class F or Class M) are to be used, an external magnetic tripper or mechanical synchronizer may be used in just the same fashion as with a shutter without built-in flash synchroniza-

**CONSTRUCTION DETAILS OF THE
X SYNCHROMATIC RAPAX SHUTTER**



- A. Diaphragm indicator
- B. Release lever
- C. Retarding device
- D. Cable release bearing
- E. Setting lever
- F. Main lever
- G. High-speed spring
- H. Main spring
- I. Press-focus lever
- J. Point of contact
- K. Connector posts

tion. The "X" Synchromatic Rapax has been designed to work easily with these standard synchronizer accessories.

Using the "X" Synchromatic Rapax for high speed flash work is simplicity in itself, for one merely connects the cord from the flash unit to the posts on the shutter, cocks the shutter at the desired speed setting, and shoots. **IT IS ONLY NECESSARY TO COCK THE SHUTTER.** The electrical contacts automatically close at the proper split second to synchronize the high speed flash at any shutter speed. There are no external gadgets to fuss with or go out of order.

If you wish to operate the Press-focus lever with the lamp connected to the synchronizer, you may do so without danger of setting off the lamp. The Press-focus lever opens and closes the shutter blades without sending the shutter and its synchronization mechanism through the normal cycle of operation.

The electrical connector posts (K) protruding from the shutter case are insulated from each other and from the shutter case. Thus there is no danger of shock when handling

the shutter. The "X" Synchromatic Rapax can be safely used with cameras with metal cases and metal shutter boards. Furthermore, it is not necessary to observe polarity when connecting a high speed electronic flash unit to the shutter. The connector cord may be plugged in to the shutter either way.

★ DO

Before putting your camera away, it is recommended that you relieve the tension on the controlling springs of the shutter by setting the shutter at a slow speed and tripping.

★ DON'T

DON'T use oil on the shutter. Special greases have been applied, making it unnecessary to use any additional lubricants. *Oil will ruin the shutter.*

DON'T use graphite. If the shutter seems

sluggish, it may be the result of continuous wear, extreme atmospheric conditions, or undue exposure to dust. Should dust settle on the mechanism, use a soft camel hair brush to remove same, or blow the dust off with a rubber syringe bulb.

Guarantee

This shutter is warranted to give perfect satisfaction. If any Wollensak product, with proper care, fails to give satisfaction within one year after leaving our factory, repair or replacement will be made free of charge.

Wollensak
MEANS FINE LENSES

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