

Wollensak

SHUTTERS . . . WITH AND WITHOUT SYNCHRONIZATION

RAPAX
FULL
SYNCHROMATIC

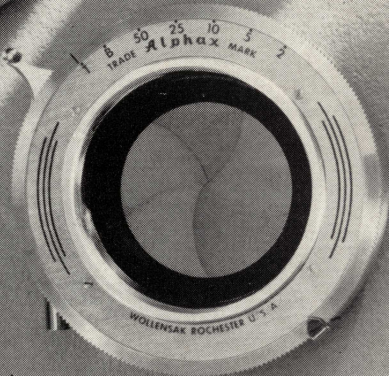
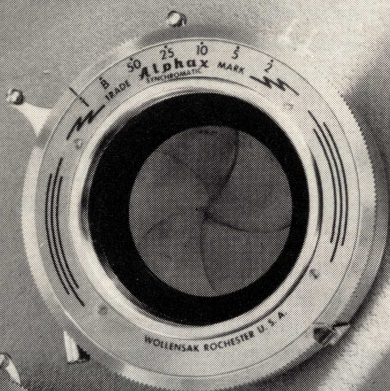
RAPAX
"X"
SYNCHROMATIC

RAPAX
NON-
SYNCHROMATIC

ALPHAX
SYNCHROMATIC

ALPHAX
NON-
SYNCHROMATIC

BARRELS,
FLANGES and
ACCESSORIES



The SHUTTER FOR UNIFORM EXPOSURE . . . Wollensak PRECISION-MADE RAPAX

WHY YOU NEED A PRECISION-MADE SHUTTER

● A watch measures time in seconds. A shutter must go a step further; it must measure time in *fractions* of a second. Thus, you can see that a good shutter must be made with the greatest care by artisans.

Whether a professional or amateur, your work is affected critically by the accuracy of the shutter you use. If you set your shutter for a given speed, you want to feel certain you will get this same speed every time . . . today, next week . . . as often as you expose. If your shutter does not give *uniform* speeds, your black and white negatives will be under or over-exposed. Chances are, your color transparencies will be ruined.

That's why it is imperative that you choose your shutter with care. A good lens does not compensate for an unreliable shutter. Only a precision-made shutter that gives you *uniform* exposures will do if you are serious about the quality of your photography.



WHY YOU'LL WANT A RAPAX

● *Accuracy . . . dependability . . .* these are the benefits of owning a Wollensak Rapax shutter. These, plus *ease of operation*. Originally designed during the war for rigorous combat duty, the Rapax has since proved its superiority in practically every field of photography.

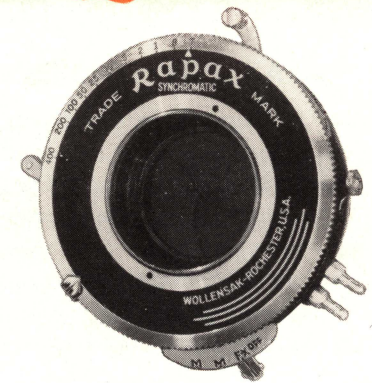
The Rapax is a between-the-lens, rim-set shutter. It is designed with an accurately fitted train of gears and pinions, working in connection with a series of levers and carefully tempered springs. Nine speeds—1 second to $\frac{1}{400}$ second—plus Bulb and Time are offered on all but the largest size; here the top speed is $\frac{1}{200}$ of a second. Speeds are set by turning the outside knurled ring until the desired figure on the speed scale is opposite the pointer at the top of the shutter.

Simple to use, the Rapax has only two operating levers. The setting lever “cocks” the shutter; that is, it puts the springs under proper tension for the desired speed. The release lever, when depressed, trips the shutter and makes the exposures. A socket is supplied for a cable release.

PRESS-FOCUS LEVER

for quick ground-glass focusing

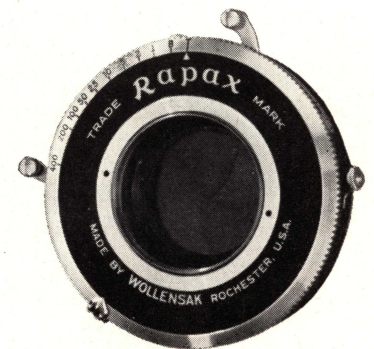
● It is not necessary to revolve the speed ring to Time to open the shutter blades for focusing. Suppose, with the shutter cocked, you wish to quickly check your focus before exposing. Whether or not you are using flash, you merely depress the press-focus lever and the blades open. This can be done at any speed. After focusing, you lift the press-focus lever to close the blades. *Your shutter is still cocked and ready for the exposure.*



Rapax Full Synchronomatic



Rapax "X" Synchronomatic



Rapax Non-Synchronomatic

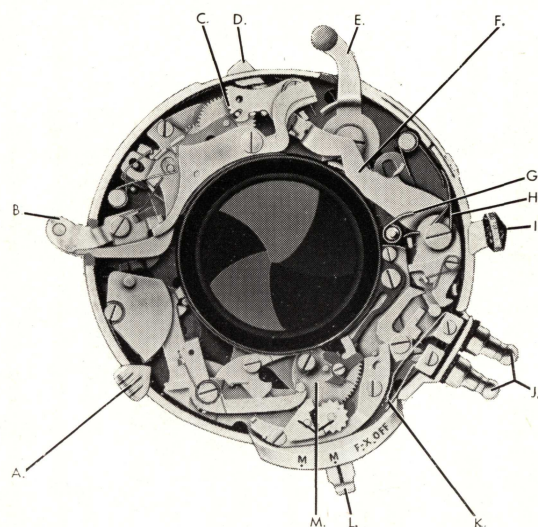
The SHUTTER FOR FLASH PHOTOGRAPHY . . . Wollensak RAPAX SYNCHROMATIC

RAPAX FULL SYNCHROMATIC

● This shutter offers the same completely automatic synchronization as the Rapax "X" Synchronomatic for high speed lamps, *plus* automatic synchronization of Class M (20-23 millisecond) and Class F (5 millisecond) lamps. The advantages of built-in synchronization over external synchronization, using a magnetic tripper, are: (1) more consistently accurate synchronization; (2) less current drain from the battery; (3) convenience; (4) compactness.

Proper delay for each class of lamp is provided on an easy-to-read, easy-to-set scale at the bottom of the shutter. On this scale are a black "M," a red "M," a red "F" and black "X" combination, and a white "OFF." The black "M" is used with shutter speed settings of 100 and faster for synchronizing Class M lamps. These speed settings are marked in black on the speed ring. The red "M" and the red "F" are used with shutter speed settings of 50 and slower to synchronize the Class M lamps and the Class F lamps respectively. These speed settings are marked in red on the speed ring. The black "X" setting is used at any shutter speed setting to synchronize the "X" type (or trigger type) electronic high speed flash units.

A great advantage of this shutter is that there is no separate cocking lever for the synchronization mechanism. COCKING THE SHUTTER AUTOMATICALLY COCKS THE SYNCHRONIZER. This greatly simplifies flash picture taking, and eliminates the ominous possibility of neglecting to cock the synchronizer.



Rapax Full Synchronomatic

CONSTRUCTION DETAILS

- 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. Connector posts
- K. Point of contact
- L. Time-delay indicator
- M. Synchronizer retarding mechanism

RAPAX "X" SYNCHROMATIC

● This shutter offers built-in electrical contacts for flashing the "X" type (also known as "trigger" type, "O" type, and thyatron trigger type) electronic high speed lamps at any shutter speed. For ordinary flash lamps, the Rapax "X" Synchronomatic is operated with a solenoid in the same manner as the Rapax Non-Synchronomatic.

Using the "X" Synchronomatic for high speed lamps is simplicity itself. With the cord connected from the circuit of the flash unit to the contact posts on the shutter, it is only necessary to cock the shutter and shoot. The electrical contacts within the shutter automatically close at the proper split second to synchronize the lamp at any shutter speed. You are assured of positive, unerring synchronization.

RAPAX NON-SYNCHROMATIC

● This shutter is for use with a solenoid, preferred by some photographers who like the convenience of tripping the shutter from a push-button on the battery case, or by means of a remote control cord. If you already have flash equipment for battery-operated synchronization with a solenoid, this shutter will give you excellent performance. However, if you feel you may use one of the increasingly popular high speed lamps in the future, you will be wise to choose the Rapax "X" Synchronomatic.

RAPAX "M-F" SYNCHROMATIC

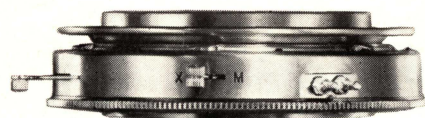
● Made for manufacturers of small cameras in the No. 0 and No. 1 sizes, this shutter offers a simplified type of internal synchronizer which is pre-set at the factory and has no external synchronizer selector lever. *It synchronizes Class F lamps at all speed settings and the Class M lamps at speed settings of 25 and slower. It is not synchronized for "X" type electronic high speed flash.*

SPECIFICATIONS

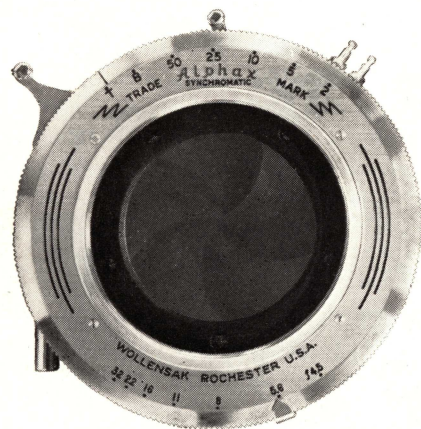
Size	Maximum Diaphragm Opening		Lens Mount Thread Diameter		Speeds	Flange Diameter	
	Inch	mm	Front Inches	Rear Inches		Inside, Inches	Outside, Inches
0	$\frac{11}{16}$	17.3	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{1}{2}$ to $\frac{1}{400}$	$\frac{9}{16}$	$1\frac{7}{64}$
1	$\frac{33}{32}$	20	$\frac{3}{32}$	$1\frac{1}{32}$	1 to $\frac{1}{400}$	$1\frac{5}{32}$	$1\frac{11}{16}$
2	1	25.4	$1\frac{1}{4}$	$1\frac{1}{4}$	1 to $\frac{1}{400}$	$1\frac{9}{64}$	$1\frac{7}{8}$
3	$1\frac{17}{64}$	32	$1\frac{35}{64}$	$1\frac{37}{64}$	1 to $\frac{1}{200}$	$1\frac{5}{8}$	$2\frac{15}{32}$

Wollensak ALPHAX SYNCHROMATIC

... The SHUTTER FOR LONGER FOCUS LENSES



This view of the shutter rim shows the position of the synchronizer selector lever.



Alphax "M-X" Synchronomatic

ALPHAX "M-X" SYNCHROMATIC

● Professional photographers no longer need to fuss with external synchronizers. The No. 4 and No. 5 Alphax "M-X" Synchronomatics offer a built-in mechanism which assures positive automatic synchronization of most any popular type flash lamp.

There is no separate lever to cock the synchronizer. The synchronizer automatically operates when the shutter is tripped. In fact, there is no cocking lever on the shutter at all. The operating lever is depressed by hand or cable release; the flash lamp peaks at the widest opening of the shutter blades; the picture is taken. It's as simple as operating a box camera.

The synchronizer selector lever, which determines the proper delay for each type lamp, is conveniently located on the rim of the shutter for easy checking before

exposure. The "M" setting is used for all Class M (20-23 millisecond) lamps at any shutter speed. The "X" setting is used for trigger type high speed electronic flash units at any shutter speed. If Class F (5 millisecond) lamps should be used, they will be in synchronization at speed settings of 25 and slower when the selector lever is at "X."

ALPHAX NON-SYNCHROMATIC

● The Standard Alphax, without built-in synchronization, is available for those who do not expect to do flash work. This shutter is identical to the Alphax Synchronomatic in every other respect.

ALPHAX "M-F" SYNCHROMATIC

● This shutter in the No. 0 and No. 1 size is furnished to manufacturers of smaller sized hand-held cameras. Synchronization is pre-set at the factory eliminating the need for an external synchronizer selector lever. *Class F lamps are in synchronization at all shutter speeds, and Class M lamps at speed settings of 25 and slower.* No provision is made for synchronization of "X"-type electronic high speed flash.

SPECIFICATIONS

Size	Maximum Diaphragm Opening		Lens Mount Thread Diameter		Speeds	Flange Diameter	
	Inch	mm	Front Inches	Rear Inches		Inside, Inches	Outside, Inches
0	$\frac{35}{64}$	14	$\frac{51}{64}$	$\frac{55}{64}$	$\frac{1}{16}$ to $\frac{1}{200}$	$\frac{15}{16}$	$1\frac{15}{32}$
1	$\frac{47}{64}$	18.7	$\frac{15}{16}$	$1\frac{1}{64}$	$\frac{1}{16}$ to $\frac{1}{200}$	$1\frac{5}{32}$	$1\frac{11}{16}$
*3	$1\frac{3}{8}$	34.9	$1\frac{51}{64}$	$1\frac{51}{64}$	1 to $\frac{1}{100}$	$1\frac{51}{64}$	$2\frac{21}{32}$
4	$1\frac{3}{4}$	44.7	$2\frac{21}{64}$	$2\frac{21}{64}$	$\frac{1}{2}$ to $\frac{1}{50}$	$2\frac{19}{32}$	$3\frac{17}{32}$
5	$2\frac{7}{32}$	56.7	$2\frac{15}{16}$	$2\frac{15}{16}$	$\frac{1}{2}$ to $\frac{1}{50}$	$3\frac{3}{32}$	$4\frac{5}{64}$

*Not available with synchronization

WOLLENSAK LENS BARRELS

● Here again "precision" is the watchword. Perfect concentricity is guaranteed to assure the best results from the photographic objective. Each barrel is supplied with iris diaphragms of non-warping metal to give long life and trouble-free performance.

Size	Maximum Diaphragm Opening		Lens Mount Thread Diameter		Flange Diameter	
	Inch	mm	Front Inches	Rear Inches	Inside, Inches	Outside, Inches
000	$\frac{5}{32}$	4	$\frac{35}{64}$	$\frac{31}{64}$	$\frac{5}{8}$	$1\frac{5}{64}$
00	$\frac{19}{64}$	7	$\frac{41}{64}$	$\frac{33}{64}$	1	$1\frac{17}{32}$
0	$\frac{5}{8}$	16	1	$\frac{55}{64}$	$\frac{61}{64}$	$1\frac{29}{64}$
1	$\frac{51}{64}$	20	$1\frac{15}{64}$	$1\frac{5}{64}$	$1\frac{3}{16}$	$1\frac{11}{16}$
2	$\frac{7}{8}$	22	$1\frac{15}{64}$	$1\frac{15}{64}$	$1\frac{21}{64}$	$1\frac{55}{64}$
3	$1\frac{1}{16}$	27	$1\frac{15}{32}$	$1\frac{15}{32}$	$1\frac{19}{32}$	$2\frac{25}{64}$
4	$1\frac{19}{64}$	33	$1\frac{51}{64}$	$1\frac{51}{64}$	2	$2\frac{21}{32}$
5	$1\frac{11}{32}$	39	$2\frac{3}{64}$	$2\frac{3}{64}$	$2\frac{1}{4}$	$2\frac{53}{64}$
6	$1\frac{21}{64}$	45	$2\frac{27}{64}$	$2\frac{27}{64}$	$2\frac{5}{8}$	$3\frac{33}{64}$
7	$2\frac{13}{64}$	56	$2\frac{15}{16}$	$2\frac{15}{16}$	$3\frac{1}{8}$	$4\frac{5}{64}$
8	$2\frac{21}{32}$	67	$3\frac{27}{64}$	$3\frac{27}{64}$	$3\frac{41}{64}$	$4\frac{5}{8}$
9	$3\frac{9}{64}$	80	$3\frac{37}{64}$	$3\frac{37}{64}$	$4\frac{1}{8}$	$5\frac{1}{4}$
10	$3\frac{7}{8}$	98	$4\frac{3}{4}$	$4\frac{3}{4}$	$4\frac{47}{64}$	$6\frac{5}{64}$

Wollensak MEANS UNIFORM QUALITY

STANDARD FLANGES

<i>Thread Diam. Inch</i>	<i>Price</i>	<i>Tax</i>	<i>Thread Diam. Inch</i>	<i>Price</i>	<i>Tax</i>	<i>Thread Diam. Inch</i>
$\frac{5}{8}$ to 1	\$1.00	.....	$2\frac{9}{16}$ to 3	\$2.50	.....	$4\frac{1}{16}$ to $4\frac{1}{2}$
$1\frac{1}{16}$ to 2	1.50	.....	$3\frac{1}{16}$ to $3\frac{1}{2}$	3.00	.....	$4\frac{9}{16}$ to $5\frac{1}{2}$
$2\frac{1}{16}$ to $2\frac{1}{2}$	2.00	.....	$3\frac{9}{16}$ to 4	3.50	.....

LENS CAPS

● Wollensak lens caps are made to fit any Wollensak lens. They are of rigid chromed metal, lined with a velvet felt material. The cap fits snugly over the lens to keep out dust and moisture, and prevents accidental injury to the lens surface when not in use.

ACCESSORIES

The following Wollensak accessories are available:

Diaphragm scales	7" cable releases
Wocote Lens Cleaning Tissue	10" cable releases
Wocote Lens Cleaner	18" cable releases
Electrical connecting cords for Rapax Synchronic Shutters	30" cable releases

ADVISORY SERVICE

● Your Wollensak dealer will be glad to demonstrate any Wollensak product and answer your questions. If there are any optical or shutter problems, however, which you wish to send to a Service Department, we will give them our prompt attention. This service involves no obligation.

TWO-YEAR GUARANTEE

● Wollensak shutters are warranted to give satisfaction. If with proper care they fail to do so within two years after leaving our factory, repairs will be made free of charge if returned directly to the factory.

Wollensak
MEANS FINE LENSES

OPTICAL CO. • ROCHESTER 5, N. Y.